

**Plumbing Board
Meeting Minutes
April 15, 2014 at 9:30 a.m.
Minnesota Room – Department of Labor and Industry
443 Lafayette Road North, St. Paul, MN 55155**

Members

John Parizek (Chair)
Mike McGowan
Scott Eggen
Ron Thompson
Grant Edwards
Larry Justin
Jim Kittelson
Gale Mount
Chad Filek
Joe Beckel
Phillip Sterner
Jim Lungstrom
Ron Thompson
Pete Moulton

Members Absent

John Flagg

DLI Staff & Visitors

Wendy Legge (Chief Gen. Counsel, DLI)
Pat Munkel-Olson (Board Counsel, DLI)
Suzanne Todnem (DLI)
Cathy Tran (DLI)
Jim Peterson (DLI)
Lyndy Lutz (DLI)
Scott McLellan (DLI)
Gary Thaden (MMCA)
Richard Hauffe (ICC)
Gary Ford (Metro Testing)
Brian Noma (MDH)
Tim Power (MNLA)
Mark Wespetal (MPCA)
David Skallet (City of St. Louis Park)
Dave Schulenberg (MWWA)
Phil Raines (ABC)
Bob Taylor (Osland Piping)
Matt Marciniak (IAPMO)
Sheree Speer (Revisor's Office)
Brian Soderholm (Soderholm/WCC)
Jeff Hill (MWQA)
Jim Gander (Superior Mechanical)
Ray VinZant (Midway Vo-Tech)
Grant Brekke (Brekke Sales)

I. Call to Order

The meeting was called to order by Chair Parizek at 9:39 a.m. Introductions and housekeeping announcements were made. Attendance was taken; a quorum was met.

II. Approval of Meeting agenda

A motion was made by Kittelson, seconded by Justin to approve the agenda as presented. The vote was unanimous; the motion carried.

III. Approval of Previous Meeting Minutes

A. Plumbing Board Minutes – January 21, 2014

A motion was made by Kittelson, seconded by Filek, to approve the Minutes with the following change: Strike Gale Mount from the Members Present column; he was absent. The vote ruled by majority with 3 abstentions; the motion carried.

IV. Regular Business

Approval of Expense Reports –Parizek approved the expenses as presented.

Scott Eggen, newly appointed to the Plumbing Board for the Municipal Plumbing Inspector (Twin Cities) position, introduced himself. He works for the City of Minneapolis as a plumbing inspector and has been in the plumbing industry for more than 20 years.

V. Committee Reports

A) Department Updates

1. Certifications

Parizek noted that there was some confusion over backflow certifications and the timelines of when the upgraded certification would be required. CCLD provided clarification with updates to their website at: <http://www.dli.mn.gov/CCLD/PlumbingBackflow.asp> In addition, letters will be mailed to all individuals explaining upgraded certifications process for renewal. There are still some concerns with the Medical Gas Certifications in regards to Continuing Education and the renewal process; hopefully correction/clarification will be provided in the near future.

2. Legislative

Lungstrom provided an update on Senate File 1926 which amends Minnesota Statutes 326B.106 – inspection of public buildings and state licensed facilities. Currently the department has the ability to delegate plan review and/or inspection to the local municipality if the department determines that the municipality has enough trained inspectors to do the work. The amendment clarifies criteria used to make these determinations, written explanations if applications are denied, and the remedy process if municipalities are unhappy with our determination. In addition, the amendment automatically delegates certain projects to municipalities if they have a designated building official. These projects are referred to as “reserve projects” and include roof covering replacement, certain towers requiring special inspection, single level storage buildings, exterior maintenance work, some HVAC replacement, remodeling that doesn’t change the occupancy, and other projects determined by the Commissioner to fit into this category. This bill is supported by the department.

B) Executive Committee

The Committee met this morning for a brief meeting, reviewed today's agenda, and had an initial discussion regarding Continuing Education and Reciprocity, which will be discussed today.

C) Construction Codes Advisory Council

Kittelson stated the CCAC has not met; the next meeting will be in May.

VI. Special Business

A) Rule numbering – Office of the Revisor

- a. Suzanne Todnem introduced Sheree Speer, Office of the Revisor; Sheree will provide the Board's official rule drafts with two options for numbering: Keeping the rule in 4715 or moving to another chapter, such as 4714.

Speer referred to her handout (Attachment A) as an example to show how the two options above would work. As a rule, statutory numbers or rule numbers cannot be reused. She explained the pros and cons to each option and stated that (the Board's) primary concern is the readership of the members. From the Revisor's standpoint, starting a brand new chapter is the easiest method; the rule draft will be slightly shorter and neater because we won't be putting in all of the different notes, it will all be new. If the Board decides to renumber from chapter 4715 to 4714, the Revisor's office would take care of changing all references throughout the statutes and rules.

Pat Munkel-Olson stated that the Board discussed staying with 4715 and renumbering only the last 4 digits in a Minnesota Rule citation. This is the model that the board discussed following so that it is easier for users, is consistent with section numbering, and UPC. Suzanne Todnem added that this is how the rule draft is presented. The last 4 digits align with whatever UPC section is being amended.

Gary Thaden addressed the board stating it is an historical change going from a Minnesota generated code to a national code and he thinks that a good way to emphasize this is with a new chapter. Gale Mount agreed with switching the numbers, giving a complete break, in a new book with a new code.

Speer stated that as a rule, if this were any other statute or rule part, we would recommend starting a new chapter; however, they make an exception in this case to consider the options.

A motion was made by Mount, seconded by Moulton, to go with a new numbering system – a new chapter designated as 4714 – as the Board moves forward with adoption. The majority vote ruled with 2 opposed; the motion carried.

**B) Review of assembled proposed code amendments
Summary of Rulemaking Process handout (Attachment B)**

Todnem referenced the Regulatory Analysis portion of the Statement of Need and Reasonableness (SONAR) on page two of her handout. For Minnesota statutes, section 14.131, there are eight factors that the Board (the Agency) needs to address in the SONAR. Todnem read the first item aloud, as shown below:

(1) a description of the classes of persons who can probably be affected by the proposed rule, including classes that will bear the costs of the proposed rule and classes that will benefit from the proposed rule.

The Board agreed that the general public would probably be affected, bear the costs, and benefit from the proposed rule and this applies to the entire UPC and entire rule draft. A SONAR is needed that describes that the Board is changing from the Minnesota Plumbing Code to the Uniform Plumbing Code. SONAR's are also needed for each amendment made to the UPC. Todnem explain that there are two main parts to a SONAR – 1) the Regulatory Analysis and 2) the Rule by Rule Analysis. The Rule by Rule Analysis is where we take every single rule amendment and explain why it is necessary and reasonable. Parizek explained that this is no different than previous two rulemakings and he referred to the 2008 Rule Analysis and read aloud:

“Those who will be affected by the rules include municipal plumbing inspectors who must become familiar with and enforce applicable new provisions, design engineers who become familiar with and incorporate applicable new provisions into their designs, plumbing contractors/installers who must become familiar with and incorporate applicable new provisions into their installations, plumbing equipment suppliers who must become familiar with and incorporate applicable new provisions into the manufacture and assembly of their products, and building owner who may now use new types of materials and may have cost savings associated with installations and who may bear any new costs associated with applicable new provisions either from new construction or in maintenance, all members of the general public that utilize plumbing systems and consume drinking water will generally benefit from new code provisions as the provisions either provide for increased public safety or maintain current safety standards while allowing less expensive and more readily available materials to be used.

Those who will bear the costs of the rules primarily include building owners who must pay for initial installation costs, building owners and managers who must pay for any new costs for maintenance, and indirectly plumbing installers and material suppliers who will be responsible for bearing short term costs in their estimating and purchasing of materials and labor, although much of these costs are passed on to the Owner. Many of the amendments allow the use of new materials or methods that may be easier, less expensive, and more desirable to use, however, some may require additional expense.

Those who will benefit from the rules include municipal plumbing inspectors who will benefit when known inadequacies in the current code are corrected to provide for more uniform application and enforcement, plumbing contractors/installers who would prefer to use the new materials and methods allowed by these amendments, suppliers of the new materials allowed by these amendments, building owners and designers of new and remodeled buildings who may benefit if certain inconsistencies in code interpretation are eliminated with the proposed new rules, and all members of the general public that utilize buildings with plumbing systems or consume drinking water or food prepared in a commercial kitchen.”

Parizek noted that the above language was developed within the department and was then brought to the full board. McGowan stated that plumbing educators should also be included in the language – they would need to come up with new curriculum for Continuing Education. Parizek agreed that language regarding educators should be added. Todnem asked if the board would be comfortable using the language that was read aloud with the addition of plumbing educators and school curriculums added. She said that the Regulatory Analysis really is looking at costs. Parizek said it would be beneficial if the Board had the opportunity to review a previous Regulatory Analysis for a basis of what to look at and then comments could be added back to Todnem. and then work off of this, adding our input. Todnem explained that typically how the process works since DLI supports the board in these efforts, the administrative support would draft the SONAR and the board would authorize the Chair to give final approval. Todnem suggested a special meeting for review of the revised rule that will be amended based upon today’s discussion and it would give an opportunity to view the SONAR. Todnem stated the rule could be emailed in advance of the meeting with the intent of receiving comments back from board members. Ultimately, the board would give the chair the authority to move forward with the rule process which includes signing off on a final SONAR. Parizek noted that in previous rulemakings he worked with the department on the Regulatory Analysis and then a draft was brought back to the Board for approval and the Board did grant the Chair authority to work with the department. Board members could submit comments to the department regarding the Regulatory Analysis. This is only one part of it; in addition, there is the line by line SONAR for all changes that are being made.

Parizek asked Todnem to get this information out to board members for their review and comments. Todnem referred to the Rulemaking Progress Chart (Attachment C). She explained that the “Request for Comments” was published on November 13, 2012 for this rule. Currently the Board is working on “Agency develops rules and SONAR”, the third box from the left on the chart. Todnem stated that if the Board can develop the rules and SONAR during the months of April and May, putting the “Governor’s Office Review, the 4th box, in June. They typically shoot for a 21-day turnaround time that would then lead to publishing a Notice of Intent in July and there is a plan to do a Dual Notice, followed by a 30-day comment period and a 10-day period after this, which would put a hearing in

late August. This is an optimistic and ambitious timeline. After the hearing, there is typically a 20-day comment period followed by a 5-day rebuttal period. Todnem again referred to the chart, "OAH Review" and said this would be a 30-day time period and if everything is approved and moved forward then the publication of the Notice of Adoption would be in November 2014. She said if the Board was comfortable with this timeframe then she suggested the Board hold a Special Meeting and asked for the Board's comments at least 10-14 days prior. Parizek stated he would ask the Board later in the meeting to decide whether to schedule a Special Meeting and a date of when to submit Regulatory Analysis comments to Todnem.

Todnem referred to the document titled "*DRAFT_FOR DISCUSSION PURPOSES ONLY*" (Attachment D) and explained that new language is underlined. All of the language will be new to the Revisor's office; therefore, even if language is present in the UPC if it is being amended then it is new to the rule. If there are portions of the UPC that the Board is proposing to delete then it won't be shown as stricken language because the Revisor's office has never seen the language, therefore, she doesn't need to know that it is being removed.

Matt Marciniak clarified that the Minnesota Plumbing Code would be available online and would be different than the Revisor's version. IAPMO's intention is to make the rules easily enforceable and presented in a way so that mistakes don't occur. Todnem stated that IAPMO's version would not be enforceable – the Revisor's rule is the only version that will be enforceable – a cleaned up version without underlining or portions of the UPC that aren't being amended. The Revisor's final rule will be a lot shorter than IAPMO's document. Wendy Legge clarified that the official plumbing code published by the Revisor would be the only enforceable version.

Todnem referred again to the "*DRAFT_FOR DISCUSSION PURPOSES ONLY*" (Attachment D) stating that current rule items that are going to be repealed are not reflected in this document. Her understanding of the goal today is to focus on this proposed rule and looking at the compilation of the individual amendments that were thoroughly discussed and voted on, focusing on making corrections that need to be made. Types of corrections to focus on would be: jurisdictional concerns, conflicting provisions, or ambiguous language that needs clarification. The goal today is not to make substantive changes.

The meeting broke from 10:50 a.m. to 11:10 a.m.

Todnem addressed items/concerns/amendments to the "*DRAFT_FOR DISCUSSION PURPOSES ONLY*" document:

Section 4715.0101, subp. 6, page 3, was amended to read as follows:

"Subp. 6. Health and Safety. No provision of this code shall be deemed to require a change in a portion of a plumbing or drainage system or other work regulated by this code in or on an existing

building or lot where such work was installed and is maintained in accordance with rule in effect prior to the effective date of this code.

Exception: ~~except~~ ~~†~~ ~~W~~here such plumbing or drainage system or other work regulated by this code is determined by the Authority Having Jurisdiction to be dangerous, unsafe, insanitary, or a nuisance ~~and or~~ a hazard to life, health, or property **then the Owner or Owner's agent shall be responsible for bringing the existing plumbing installation within the provisions of this code.** Where these conditions exist, corrections by the owner or owner's agent shall be responsible for installing additional plumbing or making such corrections as may be necessary to abate such nuisance or hazard and bring the existing plumbing installation within the provisions of this code."

A Motion was made by Edwards, seconded by Sterner, to accept language as amended in 4715.0101, subp. 6. The vote was unanimous; the motion carried.

Todnem suggested amending section 4715.0203, subpart 1, page 3, Administrative Authority definition, and will bring amended language to the Board after the lunch break.

Todnem suggested adding a definition of "Code" to reference the Minnesota Plumbing Code. Currently the UPC has a definition of "Code" that is very generic but it doesn't define this code. She proposed to use the same definition as other CCLD rule chapters; therefore, "Code" would be defined as:

"For purposes of this chapter, "the Code" or "this Code" means Minnesota Rules, chapter 4714, the Minnesota Plumbing Code."

A Motion was made by McGowan, seconded by Justin, to approve the addition of "Code" to the Definitions section. The Majority ruled with 1 abstention; the motion carried. The UPC definition of "Code" would be deleted in its entirety.

Todnem suggested amending the Definition of "Private Sewage Disposal Systems" per the handout titled "Suggested change to Section 218.0 (Definitions), as shown below:

Proposed Language:

Private Sewage Disposal System. A septic tank with the effluent discharging into a subsurface disposal field, into one or more seepage pits, or into a combination of subsurface disposal field and seepage ~~pit designed for use apart from a public sewer as regulated under the rules administered by the Minnesota Pollution Control Agency. This system is also referred to as Subsurface Sewage Treatment System (SSTS).~~

MPCA Suggested Language:

Private Sewage Disposal System. ~~A subsurface sewage treatment system~~ ~~septic tank with the effluent discharging into a subsurface disposal field, into one or more seepage pits, or into a combination of subsurface disposal field and seepage pit~~ designed for use apart from a public sewer as regulated under the rules administered by the Minnesota Pollution Control Agency. This system is also referred to as Subsurface Sewage Treatment System (SSTS).

A motion was made by Justin, seconded by Sterner, to delete the proposed language and replace with the suggested language by MPCA for the definition of Private Sewage Disposal System. The vote was unanimous; the motion carried.

Ron Thompson said that “design criteria” should be stricken from the language in Item U, section 4715.0100 BASIC PLUMBING PRINCIPLES and should read as follows:

U. If water closets or other plumbing fixtures are installed in a building where there is no public sewer available as determined by the Authority Having Jurisdiction, suitable provision must be made for treatment of the building sewage by methods which meet the requirements **design criteria of rules administered** by the Minnesota Pollution Control Agency.

A Motion was made by Kittelson, seconded by Sterner, to accept amended language to item U, section 4715.0100, as shown above. The vote was unanimous; the motion carried.

Todnem stated that “Commissioner” should be added to the Definitions section and read as follows: “*Commissioner means the Commissioner of Labor and Industry.*” Legge pointed out that there is a definition of Commissioner in chapter 326B.017, subp. 3, that is slightly different that reads as follows: “*The commissioner of labor and industry or a duly designated representative of the Commissioner who is either an employee of the Department of Labor and Industry or a person working under contract with the department.*” She believes that this definition would apply to the plumbing rules as well and asked if another definition needed to be added or should the definition given by Todnem be repeated in the Plumbing Code. Tran stated that the definition that is in Statute should be used and should be repeated for ease of use.

A motion was made by Edwards, seconded by Beckel, to use the definition of Commissioner found in chapter 326B.017, subp. 3 and the definition should be repeated. The majority vote ruled with 1 opposed; the motion carried.

Amendment to 4715.0418, section 418.4 Food Storage Areas per Todnem, to read as follows:

“4715.0418 FLOOR DRAINS

Subp 1. Section 418.4. UPC section 418.4 is amended to read as follows:

418.4 Food Storage Areas. Where drains are provided in storerooms, walk-in freezers, walk-in coolers, refrigerated equipment, or other locations where food is stored, such drains shall have indirect waste piping. Floor drains are prohibited in retail food service refrigeration systems according to part 4626.1190 and ANSI/NSF Standard 7 as referenced in Chapter 4626. Separate waste pipes shall be run from each food storage area, each with an indirect connection to the building sanitary drainage system. Traps shall be provided in accordance with Section 801.2.2 of this code and shall be vented.

Indirect drains shall be permitted to be located in freezers or other spaces where freezing temperatures are maintained, provided that traps, where supplied, shall be located where the seal will not freeze. Otherwise, the floor of the freezer shall be sloped to a floor drain located outside of the storage compartment.”

Note: DLI’s proposal of section 418.4 was rejected at a previous meeting; however, the Department of Health’s proposal of section 418.4 was accepted to move forward. Ron Thompson confirmed that the language before the Board, as shown above, was MDH’s proposed language that was approved to bring forward to the Board.

A Motion was made by Edwards, seconded by Mount, to amend 418.4, with striking the language as follows (and as shown above): “Floor drains are prohibited in retail food service refrigeration systems according to part 4626.1190 and ANSI/NSF Standard 7 as referenced in Chapter 4626”. The majority vote ruled with 3 opposed; the motion carried.

The meeting broke for lunch.

Todnem’s suggested amending 4715.0317 FOOD HANDLING ESTABLISHMENTS, section 317.1 General, as follows:

“4715.0317 FOOD-HANDLING ESTABLISHMENTS

Section 317.1. UPC section 317.1 is amended to read as follows:

317.1 General. Food or drink shall not be stored, prepared, or displayed beneath soil or drain pipes, unless those areas are protected against leakage or condensation from such pipes reaching the food or drink as described below. Soil drain pipes in facilities regulated by Minnesota Rules, Chapter 4626 must have the pipes shielded in accordance with part 4626.0960. Where building design requires that soil or drain pipes installed be located over such areas where food or drink will be stored, prepared, or displayed, the installation shall be made installed with the least minimum possible number of joints necessary and shall be installed so as to connected to the nearest adequately sized vertical stack with the following provisions as follows:

- (1) Plumbing Openings through floors over such areas shall be sealed watertight to the floor construction.**
- (2) Floor and shower drains installed above such areas shall be equipped with integral seepage pans.**
- (3) Soil or drain pipes shall be of an approved material as listed in Table 1401.1 and Section 701.1. Cleanouts shall be extended through the floor construction above.**
- (4) Piping subject to operation at temperatures that will form condensation on the exterior of the pipe shall be thermally insulated.**
- (5) Where pipes are installed in ceilings above such areas, the ceiling shall be of the removable type, or shall be provided with access panels in order to form a ready access for inspection of piping.”**

A Motion was made by Filek, seconded by Mount, to delete section 317.1 General, as shown above, in its entirety. The vote was 5 for / 6 opposed and the motion FAILED.

A Motion was made by Eggen, seconded by Edwards, to accept section 317.1 General as amended above. The Majority vote ruled with 6 for / 5 opposed; the motion carried.

Amendment to section 4715.0203, Administrative Authority and the addition of Subp. 7, Commissioner's Authority, in the definitions section, to read as follows:

4715.0203 - A -

Subpart 1. **Added definitions.** UPC Section 203.0 is modified by adding the following definition:

Administrative authority.

"Administrative authority" means the commissioner.

Exception: When a governmental subdivision adopts and maintains a comprehensive plumbing enforcement program that is conducted by personnel who are knowledgeable about plumbing installation requirements, and includes enforcement of all code provisions including materials, methods, inspection, and testing, the administrative authority shall be the governing body of the adopting unit of government or a duly designated representative of the governing body who is either an employee of the governing body or a person working under contract with the governing body.

Subp. 7 Commissioner's Authority:

The commissioner retains the ultimate authority to enforce this code and Minnesota Statutes, sections 326B.41 to 326B.59, regardless of whether the administrative authority is the commissioner or the governing body of a governmental subdivision.

~~Administrative Authority. Means the commissioner of labor and industry. (When a governmental subdivision adopts and maintains a comprehensive plumbing enforcement program that is conducted by personnel who are knowledgeable about plumbing installation requirements, and includes enforcement of all code provisions including materials, methods, inspection, and testing, the administrative authority shall be the governing body of the adopting unit of government, its agents, and employees; however, the commissioner of labor and industry retains the ultimate authority to enforce Minnesota Statutes, sections 326B.41 to 326B.59, and provisions of this chapter that are necessary to ensure compliance.)~~

A motion was made by Mount, seconded by Justin, to accept the amended language for 4715.0203, Administrative authority and to accept addition of Subp. 7, Commissioner's authority, and to move language forward with rulemaking (as shown above). The vote was unanimous; the motion carried.

Todnem noted the following changes to the rule draft:

- Editorial correction to add **110 F (43° C)** to 4715.0421, section 421.2, Limitation of Hot Water Temperature for Public Lavatories.
- Formatting change to 4715.0507, section 507.5, Relief Valve Discharge, to read as follows: **"507.5 Relief Valve Discharge. Discharge from a relief valve into a water heater pan shall be prohibited. Discharge relief valve shall terminate within 18 inches of:**
 - 1. the floor or**
 - 2. a safe place of disposal."**

- Section 603.4.2, Testing, is not being amended but there is concern that it is redundant with language in the DRAFT_FOR DISCUSSION PURPOSES ONLY section 603.5.23.2, Testing and maintenance. Parizek agreed there was some redundancy. Jim Peterson suggested eliminating 603.5.23.2 and keeping section 603.4.2. From the department's standpoint, it would be difficult enforcing the provision of all testable devices; additional resources would be needed. The Board discussed issues that could result from the language in 603.5.23.2 that reads: "an agency acceptable to the administrative authority". Ninety-five to 98% of municipalities don't have adequate programs in place to comply with what we are putting in the code. The job of the Board is to deal with code language, not to make sure that the code is being enforced. **Parizek stated that section 603.4.2 deals with the responsibility of having testing done and section 603.5.23.2 deals with the programs and inspections put into place for installation. The two sections address different items and he sees no problem leaving both in code language.**

A motion was made by Filek, seconded by Edwards, to leave language as is in section 603.5.23.2 (as presented in DRAFT_FOR DISCUSSION PURPOSES ONLY). The vote was unanimous; the motion carried.

The Enforcement Division at the Department of Labor and Industry will be responsible for testing compliance. The Board does not have control over enforcement. The water purveyor is ultimately responsible but there will still need to be enforcement.

- Editorial suggestion: Section 713.1 of the 2012 UPC. There were no amendments proposed, it is not in the DRAFT; however, there is a reference to 101.8, chapter 1. Chapter 1 is not incorporated by reference into the rules therefore that reference to 4714.0101 Conformance of Code, subp. 6., will be corrected.
- Formatting / language suggestion to Section 713.7: The exemption was changed to subp. 3, section 713.8, Exceptions to public sewer, and the language was amended to read as follows: **Subp. 3 Section 713.8 Exceptions to public sewer. Existing single and two-family dwellings and buildings or structures accessory thereto, when connected to an approved private sewage disposal system prior to the time of connecting the premises to the public sewer need not connect to public sewer when there is insufficient grade or slope to permit drainage to the public sewer by gravity, and the following conditions are met:**
 1. No hazard, nuisance, or insanitary condition is evidenced from the private sewage disposal system;
 2. The private sewage system is maintained properly; and
 3. Written permission has been obtained from the Authority Having Jurisdiction.

Discussion followed on whether to use the suggested language above or if the Exception, as presented in the DRAFT handout, is needed at all. Is the purpose under the UPC to have an exception? Tran stated the exception seems to be out of context. The Board ultimately decided to keep the Exception as is and to accept “municipal utility easement”.

A Motion was made by Justin, seconded by Sterner, to accept the language as presented in the DRAFT handout, section 713.7, Installation. The majority vote rules with 1 opposed; the motion carried.

- Section 714.5 (not included in the DRAFT handout) makes a reference to Health Officer. The department recommends either striking the entire section or at least the phrase “or the health officer” or clarify that no interior tanks are permitted and that the provision regulates only exterior tanks. This is not a health officer issue – waste water holding tanks are regulated by the MPCA.

A Motion was made by Mount, seconded by Beckel, to strike the phrase “or the Health Officer”. The vote was unanimous; the motion carried.

- Section 720.1 General / section 721 Location. **When possible,** was recommended to be stricken. Language was amended, however, after discussion by the Board, section 4715.0720 to 4715.071 were both stricken in their entirety, as shown below:

4715.0720 Sewer and Water Pipes

Section 720.1. UPC Section 720.1 is amended to read as follows:

720.1 General. ~~Unless otherwise approved by the authority having jurisdiction, underground water service pipes and sewers or drainage piping shall not be less than 10 feet apart horizontally and shall be separated by undisturbed or compacted earth.~~ Building sewers or drainage piping of clay or materials that are not approved for use within a building shall not be run or laid in the same trench as the water pipes unless **approved by the Authority Having Jurisdiction and the following requirements are met:**

(1) The bottom of the water pipe, at points, shall be not less than 12 inches (305 mm) above the top of the sewer or drain line.

(2) The water pipe shall be placed on a solid shelf excavated at one side of the common trench with a clear horizontal distance of not less than 12 inches (305 mm) from the sewer or drain line.

(3) Water pipes crossing sewer or drainage piping constructed of clay or materials that are not approved for use within a building shall be laid not less than 12 inches (305 mm) above the sewer or drain pipe.

For the purpose of this section, “within a building” shall mean within the fixed limits of the building foundation.

A. ~~4715.0721 LOCATION~~

~~Subp. 1. Section 721.1. UPC section 721.1 is amended to read as follows:~~

~~721.1 Building Sewer. Except as provided in Section 721.2, no building sewer shall be located in a lot other than the lot that is the site of the building or structure served by such sewer.~~

~~Subp. 2. Section 721. UPC Table 721.1 is deleted.~~

A Motion was made by Filek, seconded by Mount, to strike the language as shown above (lines 1 to 20 of the DRAFT handout). The vote was unanimous; the motion carried.

The Board discussed Table 721.1 issues in depth and decided not to make any changes to Table 721.1 at this time but consider changes that could be made later. If the language was deleted in Footnote 3, or “50” was deleted from Footnote 3, language could be put in its place, such as: see Minnesota Well Code, chapter 4725. Parizek recommended the department review setback requirements for streams, make adjustments to Footnote #6, and set a meeting date to continue this in May.

- Clarification needed for references to the commissioner in section 1701.1. What do you want the commissioner to approve? The commissioner would have approval over all of section 1702.1 and 1702.2. The intention is that only the commissioner would be making these approvals not the administrative authorities.
- The note under Table 1702.12 should read “...and certified to ASSE Standard ~~51206120~~.”
- Ron Thompson expressed concerns with language in 1702.4, lines 6 to 8 of the DRAFT handout. All of chapter 16 has been deleted, chapter 17 is being adopted and this allows makeup water for rainwater systems to be potable water or reclaimed (recycled) water. There are essentially no standards and no protocol for reclaimed water systems. He noted that the reclaimed (recycled) water language should be removed. Parizek added that there are some areas that are using reclaimed water and so that is why this language is present.

A Motion was made by Mount, seconded by Beckel, to send all suggested language as amended today to the Revisor’s office. The majority vote ruled with 1 opposed; the motion carried.

Parizek asked the Board to have their comments regarding the Regulatory Analysis back to Todnem by May 15, 2014.

B) Continuing education reciprocity

There were some reciprocity concerns by North Dakota because they have a 3 hour every two-year CE requirement. Minnesota has a requirement of 16 CE hours. We don't have jurisdiction over CE reciprocity. We would have to open up Rulemaking in 4715 to address the requirements. Jim Peterson has been talking to authorities in ND. We will be setting up a meeting with ND and SD to address CE reciprocity issues.

VII. Complaints

None

VIII. Open Forum

There are two (2) requests to address the Board:

Mr. Ray VanZant:

Code section 2515, wet venting of a stack group. Parizek stated that typically when there is an issue with a local inspector or local administrative authority, we ask for the department's interpretation of it first and then if there is still a dispute between the department's interpretation and the local inspector, then it would come to the Plumbing Board for Final Interpretation. Parizek stated he would review VanZant's RFI with Jim Peterson and address via email, perhaps write to the local administrative authority.

Mr. Grant Brecke:

Section 4715.1017, Oil and Flammable Liquid Interceptors.

Mr. Brecke discussed all of his issues and asked the board to review this information again. Parizek asked if Brecke could submit his comments, along with ASTM Standard 6104-97, to the Board for their review. Tran explained that the email address for the Plumbing Board is located on DLI's website and is: dli.cclboards@state.mn.us Charlie Ismert will be interested in attending the next Board meeting if this issue will be included in the agenda.

IX. Board Discussion

Mount announced that he will be retiring and won't be able to attend the July and October meetings. He will not be renewing his seat on the Board.

X. Announcements

Next Regularly Scheduled Meetings

- i. July 15, 2014 @ 9:30 a.m. – Minnesota Room, DLI (Annual Meeting - Election of Officers)
- ii. October 21, 2014 @ 9:30 a.m. – Minnesota Room, DLI

Parizek noted that there will be a Special meeting in May or June.

XI. Adjournment

The meeting was adjourned at 4:22 p.m. by consent.

Respectfully submitted,

A handwritten signature in cursive script, appearing to read "Chad Filek".

Chad Filek

1305.0308 [Repealed, 27 SR 1474] 2003

1305.0308 INSTITUTIONAL GROUP I. 2007

*From the International
Building Code*

Subpart 1. **Section 308.2.** IBC Section 308.2 is amended to read as follows:

308.2 Group I-1. This occupancy shall include buildings, structures, or parts thereof housing more than 16 persons, on a 24-hour basis, who because of age, mental disability, or other reasons, live in a supervised residential environment that provides personal care services. The occupants are capable of responding to an emergency situation without physical assistance from staff. This group shall include, but not be limited to, the following:

- residential board and care facilities
- assisted living facilities
- halfway houses
- group homes
- congregate care facilities
- social rehabilitation facilities
- alcohol and drug centers
- convalescent facilities

A facility such as the above with five or fewer persons shall be classified as Group R-3. A facility such as above housing at least six and not more than 16 persons, shall be classified as Group R-4.

Subp. 2. **Section 308.3.** IBC Section 308.3 is amended to read as follows:

308.3 Group I-2. This occupancy shall include buildings and structures used for medical, surgical, psychiatric, nursing, or custodial care on a 24-hour basis for more than five persons who are not capable of self-preservation. This group shall include, but not be limited to, the following:

- hospitals
- nursing homes, both intermediate-care facilities and skilled nursing facilities
- mental hospitals
- detoxification facilities

A facility such as the above with five or fewer persons shall be classified as Group R-3.

Subp. 3. **Section 308.5.** IBC Section 308.5 is amended to read as follows:

308.5 Group I-4, day care facilities. This group shall include buildings and structures occupied by persons of any age who receive custodial care for less than 24 hours by

CHAPTER 9540
DEPARTMENT OF HUMAN SERVICES
PROGRAM GRANTS; MENTALLY RETARDED

9540.0100 [Repealed, L 1995 c 233 art 3 s 4; L 1995 c 248 art 3 s 4]

Published Electronically: *October 11, 2007*

9540.0200 [Repealed, L 1995 c 233 art 3 s 4; L 1995 c 248 art 3 s 4]

Published Electronically: *October 11, 2007*

9540.0300 [Repealed, L 1995 c 233 art 3 s 4; L 1995 c 248 art 3 s 4]

Published Electronically: *October 11, 2007*

9540.0400 [Repealed, L 1995 c 233 art 3 s 4; L 1995 c 248 art 3 s 4]

Published Electronically: *October 11, 2007*

9540.0500 [Repealed, L 1995 c 233 art 3 s 4; L 1995 c 248 art 3 s 4]

Published Electronically: *October 11, 2007*

9540.1000 [Repealed, L 1995 c 233 art 3 s 4; L 1995 c 248 art 3 s 4]

Published Electronically: *October 11, 2007*

9540.1100 [Repealed, L 1995 c 233 art 3 s 4; L 1995 c 248 art 3 s 4]

Published Electronically: *October 11, 2007*

9540.1200 [Repealed, L 1995 c 233 art 3 s 4; L 1995 c 248 art 3 s 4]

Published Electronically: *October 11, 2007*

9540.1300 [Repealed, L 1995 c 233 art 3 s 4; L 1995 c 248 art 3 s 4]

Published Electronically: *October 11, 2007*

9540.1400 [Repealed, L 1995 c 233 art 3 s 4; L 1995 c 248 art 3 s 4]

Published Electronically: *October 11, 2007*

9540.1500 [Repealed, L 1995 c 233 art 3 s 4; L 1995 c 248 art 3 s 4]

Published Electronically: *October 11, 2007*

Here is an
entirely repealed
chapter - we
could put an
editorial note
at the top that
directs the
reader to
"see Chapter
XXXX for the
Plumbing Code"

PROGRAM GRANTS; MENTALLY RETARDED

2

9540.2000 [Repealed, L 1995 c 233 art 3 s 4; L 1995 c 248 art 3 s 4]

Published Electronically: *October 11, 2007*

9540.2100 [Repealed, L 1995 c 233 art 3 s 4; L 1995 c 248 art 3 s 4]

Published Electronically: *October 11, 2007*

9540.2200 [Repealed, L 1995 c 233 art 3 s 4; L 1995 c 248 art 3 s 4]

Published Electronically: *October 11, 2007*

9540.2300 [Repealed, L 1995 c 233 art 3 s 4; L 1995 c 248 art 3 s 4]

Published Electronically: *October 11, 2007*

9540.2400 [Repealed, L 1995 c 233 art 3 s 4; L 1995 c 248 art 3 s 4]

Published Electronically: *October 11, 2007*

9540.2500 [Repealed, L 1995 c 233 art 3 s 4; L 1995 c 248 art 3 s 4]

Published Electronically: *October 11, 2007*

9540.2600 [Repealed, L 1995 c 233 art 3 s 4; L 1995 c 248 art 3 s 4]

Published Electronically: *October 11, 2007*

9540.2700 [Repealed, L 1995 c 233 art 3 s 4; L 1995 c 248 art 3 s 4]

Published Electronically: *October 11, 2007*

1305.1009 [Renumbered 1305.1000, subps 3 and 4]

1305.1009 SECTION 1009, STAIRWAYS AND HANDRAILS.

IBC Section 1009.9. IBC Section 1009.9 is amended to read as follows:

1009.9 Alternating tread devices. Alternating tread devices are limited to an element of a means of egress in buildings of Groups F, H, and S from a mezzanine not more than 250 square feet (23 m²) in area and which serves not more than five occupants; in buildings of Group I-3 from a guard tower, observation station, or control room not more than 250 square feet (23 m²) in area and for access to unoccupied roofs. Access to mechanical equipment or appliances on a roof shall be in accordance with Section 1209.3.1 and the Minnesota Mechanical Code.

Statutory Authority: *MS s 16B.37; 16B.59 to 16B.76; 326B.101 to 326B.194*

History: *27 SR 1474; 32 SR 7; L 2007 c 140 art 4 s 61; art 13 s 4; L 2008 c 337 s 64*

Published Electronically: *February 23, 2009*

When we renumber 1305.1009 the history moves
with the part and becomes the history of 1305.1000
subparts 3 and 4

**Summary of Rulemaking Process
Plumbing Code Rules
Minnesota Plumbing Board
April 15, 2014**

The Rulemaking Process, Documents, and Time Line. The rulemaking process is governed by Minnesota Statutes, chapter 14, and Minnesota Rules, chapter 1400. This short summary describes the main parts of the process, important documents, and time line for developing and adopting rules. If you have questions about the process, ask Suzanne Todnem at 651.284.5851 or Suzanne.todnem@state.mn.us.

- **Request for Comments.** The Request for Comments begins the formal rulemaking process. For this project, we published the Request in the November 13, 2012, State Register and mailed it to the interested parties and rulemaking mailing lists.
- **Proposed Rules.** We are now writing amendments to the Plumbing Code Rules. The Revisor of Statutes will review the rules draft and edit, as necessary, for form and style.
- **Statement of Need and Reasonableness.** The Board must justify that each rule requirement is needed and reasonable. “Needed” means that there are problems or a legislative directive that requires us to adopt or amend rules. “Reasonable” means that a proposed requirement is a reasonable solution to a problem. This justification will be in a document called the “Statement of Need and Reasonableness (SONAR).” The SONAR states the statutory authority for the rules, contains a modified cost-benefit analysis, and includes an analysis of each proposed rule.
- **Notice of Intent to Adopt Rules.** When proposed rule draft is complete, the Board will publish a Notice of Intent to Adopt Rules in the State Register. The Board will also publish the proposed rules.¹ In addition, the Board will mail both the Notice and proposed rules to interested persons and to certain legislative committees.
- **30-Day Comment Period.** After the Notice of Intent to Adopt Rules is published, there is a 30-day comment period, during which persons can submit written comments on the proposed rules. Persons can also request a hearing on the rules during the 30-day comment period. (Plus 10 days if dual notice)
- **Rules Hearing.** If there are 25 or more outstanding hearing requests, the Board must hold a hearing on the rules in front of an Administrative Law Judge (ALJ).
- **Review by Administrative Law Judge.** Whether there is a hearing or not, an ALJ reviews the proposed rules and all the documents from the rulemaking. The ALJ will approve the rules if the Board has statutory authority for the rules, has shown the rules to be needed and reasonable, has given proper notice of the proposed rules, and has complied with all other rulemaking requirements.
- **Governor Veto.** After the rules are adopted by the Board and approved by the ALJ, the Governor has 14 days to review them. The Governor may veto the rule amendments or let them become effective.
- **Notice of Adoption.** After the Governor’s review period, the Board will publish a Notice of Adoption in the State Register.
- **Effective Date.** These amendments to the rules become effective 180 days after the Notice of Adoption is published in the State Register unless the amendments to the rules provide a later effective date. The rule may provide for an earlier effective date if the Board finds that an earlier effective date is necessary to protect public health and safety after considering, among other things, the need for time for training of individuals to comply with and enforce the rule.

¹ The Board may wish to consider requesting permission to omit publishing the rule in the State Register.

- **Time Line.** This process of drafting amendments to the rules can be open-ended, although we plan to complete the rules draft around May/June. The formal part of the rulemaking process, from publishing the Notice of Intent to Adopt Rules until the date the rules become effective, takes about three months (+180 days) if there is no hearing and about five months (+180 days) if there is a hearing.

Regulatory Analysis. Minnesota Statutes, section 14.131, lists eight factors that an agency must analyze when it adopts or amends rules. We will look to you for advice and information as we analyze these factors.

From Minnesota Statutes, section 14.131. The SONAR must include the following to the extent the agency, through reasonable effort, can ascertain this information:

- (1) a description of the classes of persons who probably will be affected by the proposed rule, including classes that will bear the costs of the proposed rule and classes that will benefit from the proposed rule;
- (2) the probable costs to the agency and to any other agency of the implementation and enforcement of the proposed rule and any anticipated effect on state revenues;
- (3) a determination of whether there are less costly methods or less intrusive methods for achieving the purpose of the proposed rule;
- (4) a description of any alternative methods for achieving the purpose of the proposed rule that were seriously considered by the agency and the reasons why they were rejected in favor of the proposed rule;
- (5) the probable costs of complying with the proposed rule, including the portion of the total costs that will be borne by identifiable categories of affected parties, such as separate classes of governmental units, businesses, or individuals;
- (6) the probable costs or consequences of not adopting the proposed rule, including those costs or consequences borne by identifiable categories of affected parties, such as separate classes of governmental units, businesses, or individuals;
- (7) an assessment of any differences between the proposed rule and existing federal regulations and a specific analysis of the need for and reasonableness of each difference; and
- (8) an assessment of the cumulative effect of the rule with other federal and state regulations related to the specific purpose of the rule.

Cost to Small Businesses and Small Cities. Minnesota Statutes, section 14.127, requires the agency to determine whether, in order to comply with proposed rules during the first year after they become effective, any small business or small city would have to spend over \$25,000. A small business is defined as a business (either for profit or nonprofit) with less than 50 full-time employees. A small city is defined as a city with less than ten full-time employees. We will look to you for information about the cost of compliance for small businesses and cities.

Performance-Based Rules.

- Minnesota Statutes, sections 14.002 and 14.131, require that the SONAR describe how the agency, in developing the rules, considered and implemented performance-based standards that emphasize superior achievement in meeting the agency's regulatory objectives and maximum flexibility for the regulated party and the agency in meeting those goals.
- Please consider how you can make the rules work better for you, while still meeting your goals for these rules.
- Are there any special situations that you should consider in developing the rules?
- Are there any ways to reduce the burdens of the rules?
- Do you have any other insights on how to improve the rules?

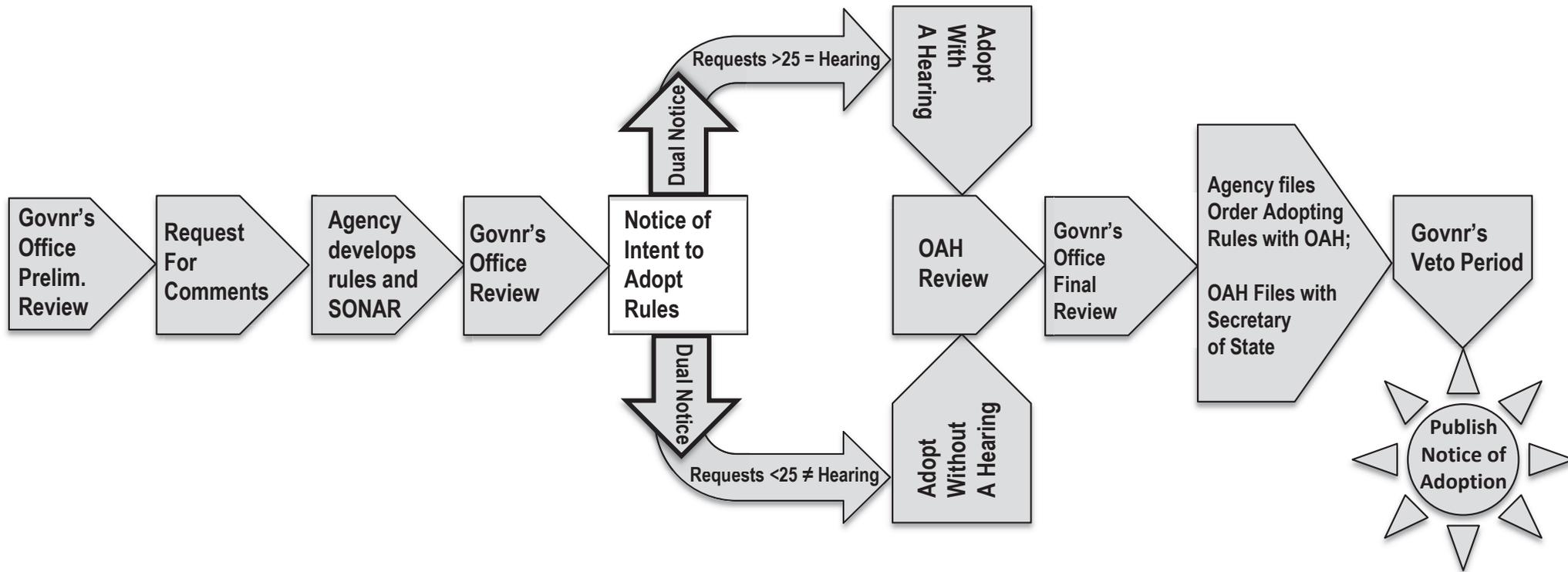
Additional Notice.

- When the Board publishes the proposed rules and the Notice of Intent to Adopt Rules, you also have to “provide additional notification to persons or classes of persons who might be affected by the proposed rule or must explain why these efforts were not made.” This was done when the Request for Comments was published.
- Please identify all interested persons and come up with ways to let them know about the rules. This includes both likely supporters and opponents of the rules.

Local Government Impact

- The Board has to evaluate the fiscal impact and benefits of proposed rules on local governments. As part of this, the Board will consult with the Department of Minnesota Management and Budget (MMB).
- In addition to consulting with MMB, please identify the fiscal impact and benefits of the proposed rules on local governments.

Rulemaking Progress Chart



1 **Note:** The rule numbering is subject to change and should be considered placeholder at this stage. This is a first
2 complete rule draft. Text in red indicates language that is not currently in the adopted portions of the Uniform
3 Plumbing Code; it is being added as a proposed amendment to be made a part of the Minnesota Plumbing Code (or
4 is currently part of the Plumbing Code and being carried forward). The intent is to reflect all UPC amendments
5 passed by simple majority vote in this single rule draft. There may have been some formatting changes but no
6 substantive changes to amendments passed by the Board. One addition has been made to the beginning of the rule
7 draft as necessary rule language.

8 **4715.0050 TITLE; INCORPORATION BY REFERENCE**

9 **Subp. 1. Generally.** Chapters 2 to 11, 14 and 17 of the 2012 edition of the Uniform Plumbing Code
10 (UPC) as promulgated by the International Association of Plumbing and Mechanical Offices (IAPMO),
11 Ontario, California, and UPC appendices A, B and I except for IS 12-2006, IS 13-2006, IS 26-2006, SIS
12 1-2003 and SIS 2-2003 of appendix I, are incorporated by reference and made part of this Minnesota
13 Plumbing Code except as qualified by the applicable provisions in Minnesota Rules, chapter 1300, and as
14 amended in this chapter. The UPC is not subject to frequent change and a copy of the UPC, with
15 amendments for use in Minnesota, is available in the office of the commissioner of labor and industry.
16 Portions of this chapter reproduce text and tables from the UPC. The UPC is copyright 2012 by the
17 IAPMO. All rights reserved.

18 **4715.0100 BASIC PLUMBING PRINCIPLES.**

19 This code is founded upon certain basic principles of environmental sanitation and safety through
20 properly designed, acceptably installed and adequately maintained plumbing systems. Some of the details
21 of plumbing construction may vary but the basic sanitary and safety principles desirable and necessary to
22 protect the health of the people are the same everywhere. As interpretations may be required, and as
23 unforeseen situations arise which are not specifically covered in this code, the twenty three principles
24 which follow shall be used to define the intent.

25 A. All premises intended for human habitation, occupancy, or use shall be provided with a potable
26 water supply which meets the requirements of the commissioner of health. Such water supply shall not be
27 connected with unsafe water sources nor shall it be subject to the hazards of backflow or back-siphonage.

28 B. Proper protection shall be provided to prevent contamination of food, water, sterile goods, and
29 similar materials by backflow of sewage. When necessary, the fixtures, device, or appliance shall be
30 connected indirectly with the building drainage system.

31 C. Each family dwelling unit shall have at least one water closet, one lavatory, one kitchen type sink,
32 and one bathtub or shower to meet the basic requirements of sanitation and personal hygiene. All other
33 structures for habitation shall be equipped with sufficient sanitary facilities.

34 D. The building sewer in every building with installed plumbing fixtures and intended for human
35 habitation, occupancy, or use when located on premises where the Authority Having Jurisdiction has
36 determined that a public sewer is available shall be connected to the public sewer.

37 E. The building drainage system shall be designed to provide adequate circulation of air in all pipes
38 with no danger of siphonage, aspiration, or forcing of trap seals under conditions of ordinary use.

1 F. The drainage system shall be designed, constructed, and maintained to conduct the waste water
2 with velocities which will prevent fouling, deposition of solids, and clogging.

3 G. The drainage system shall be provided with an adequate number of cleanouts so arranged that in
4 case of stoppage the pipes may be readily cleaned.

5 H. Where a building drainage system may be subjected to back flow of sewage, suitable provision
6 shall be made to prevent its overflow in the building.

7 I. Each vent terminal shall extend to the outer air and be so installed as to minimize the possibilities
8 of clogging and the return of foul air to the building.

9 J. No substance which will clog or accentuate clogging of pipes, produce explosive mixtures,
10 destroy the pipes or their joints, or interfere unduly with the sewage disposal process shall be allowed to
11 enter the drainage system.

12 K. The piping of the plumbing system shall be of durable material free from defective construction
13 and so designed and constructed as to give satisfactory service for its reasonable expected life.

14 L. The plumbing system shall be subjected to adequate tests and to inspections in a manner that will
15 disclose all leaks and defects in the work or the material.

16 M. Plumbing systems shall be maintained in a safe and serviceable condition from the standpoint of
17 both mechanics and health.

18 N. Plumbing shall be installed with due regard to preservation of the strength of structural members
19 and prevention of damage to the walls and other surfaces through fixture usage.

20 O. Plumbing fixtures shall be made of durable, smooth, nonabsorbent, and corrosion-resistant
21 material and shall be free from concealed fouling surfaces.

22 P. Plumbing fixtures, devices, and appurtenances shall be supplied with water in sufficient volume
23 and at pressures adequate to enable them to function properly and without undue noise under normal
24 conditions of use.

25 Q. Plumbing fixtures shall be designed and adjusted to use the minimum quantity of water consistent
26 with proper performance and cleaning. Hot water shall be supplied to all plumbing fixtures which
27 normally need or require hot water for their proper use and function.

28 R. All plumbing fixtures shall be so installed with regard to spacing as to be accessible for their
29 intended use and cleansing.

30 S. Each fixture shall be provided with a separate, accessible, self-scouring, reliable trap placed as
31 near to the fixture as possible.

32 T. No water closet or similar fixture shall be located in a room or compartment which is not properly
33 lighted and ventilated.

1 U. If water closets or other plumbing fixtures are installed in a building where there is no public
2 sewer available as determined by the Authority Having Jurisdiction, suitable provision must be made for
3 treatment of the building sewage by methods which meet the requirements **design-criteria** of rules
4 **administered** by the Minnesota Pollution Control Agency.

5 V. Devices for heating water and storing it shall be designed and installed to prevent all dangers
6 from explosion and overheating.

7 W. Sewage or other waste shall not be discharged into surface or subsurface water unless it first has
8 been subjected to an acceptable form of treatment approved by the Minnesota Pollution Control Agency.

9 **4715.0101 CONFORMANCE WITH CODE**

10 Subp. 1. **Scope.** As provided in Minnesota Statutes, sections 326B.43 and 326B.52, this Code applies to all new
11 plumbing installations performed anywhere in the state, including additions, extensions, alterations, and
12 replacements.

13 Subp. 2. **New buildings.** All plumbing materials and plumbing systems or parts thereof must be installed to meet the
14 minimum provisions of this code.

15 Subp. 3. **Existing buildings.** In existing buildings or premises in which plumbing system, drainage system or other
16 work regulated by this code are to be added, altered, renovated, or replaced, the new materials and work must meet
17 the provisions of this code. If the Authority Having Jurisdiction finds that the full performance of bringing the work
18 into compliance with all requirements of this code would result in exceptional or undue hardship by reason of
19 excessive structural or mechanical difficulty, or impracticability, a deviation may be granted by the Authority
20 Having Jurisdiction only to the extent the deviation can be granted without endangering the health and safety of the
21 occupants and the public.

22 Subp. 4. **Changes in Building Occupancy.** Plumbing systems that are a part of a building or structure undergoing a
23 change in use or occupancy, as defined in the building code, shall be in accordance with the requirements of this
24 code that are applicable to the new use or occupancy.

25 Subp. 5. **Moved Buildings.** Plumbing systems that are part of buildings or structures moved into this jurisdiction
26 shall be in accordance with the provisions of this code for new installations. Parts of the plumbing systems of a
27 building or part thereof that is moved from one foundation to another, or from one location to another, shall be
28 completely tested as new work, except that walls or floors need not be removed during such test where other
29 equivalent means of inspection acceptable to the Authority Having Jurisdiction are provided.

30 Subp. 6. **Health and Safety.** No provision of this code shall be deemed to require a change in a portion of a
31 plumbing or drainage system or other work regulated by this code in or on an existing building or lot where such
32 work was installed and is maintained in accordance with rule in effect prior to the effective date of this code.

34 **Exception:** ~~except w~~here such plumbing or drainage system or other work regulated by this code is
35 determined by the Authority Having Jurisdiction to be dangerous, unsafe, insanitary, or a nuisance **and or** a
36 hazard to life, health, or property **then the Owner or Owner's agent shall be responsible for bringing the**
37 **existing plumbing installation within the provisions of this code.** Where these conditions exist, corrections
38 by the owner or owner's agent shall be responsible for installing additional plumbing or making such
39 corrections as may be necessary to abate such nuisance or hazard and bring the existing plumbing installation
40 within the provisions of this code.

41 **4715.0203** – A –

42 Subpart 1. **Added definitions.** UPC Section 203.0 is modified by adding the following definition:

43 **Administrative authority.**

44 **"Administrative authority" means the commissioner.**

1 **Exception: When a governmental subdivision adopts and maintains a comprehensive plumbing**
2 **enforcement program that is conducted by personnel who are knowledgeable about plumbing**
3 **installation requirements, and includes enforcement of all code provisions including materials,**
4 **methods, inspection, and testing, the administrative authority shall be the governing body of the**
5 **adopting unit of government or a duly designated representative of the governing body who is either an**
6 **employee of the governing body or a person working under contract with the governing body.**

7
8 **Subp. 7 Commissioner's Authority:**

9 **The commissioner retains the ultimate authority to enforce this code and Minnesota Statutes, sections**
10 **326B.41 to 326B.59, regardless of whether the administrative authority is the commissioner or the governing**
11 **body of a governmental subdivision.**

12
13 ~~**Administrative Authority.** Means the commissioner of labor and industry. (When a governmental subdivision~~
14 ~~adopts and maintains a comprehensive plumbing enforcement program that is conducted by personnel who are~~
15 ~~knowledgeable about plumbing installation requirements, and includes enforcement of all code provisions including~~
16 ~~materials, methods, inspection, and testing, the administrative authority shall be the governing body of the adopting~~
17 ~~unit of government, its agents, and employees; however, the commissioner of labor and industry retains the ultimate~~
18 ~~authority to enforce Minnesota Statutes, sections 326B.41 to 326B.59, and provisions of this chapter that are~~
19 ~~necessary to ensure compliance.)~~

20
21 **Subpart 2. Amended definitions.** UPC Section 203.0 is modified by amending the following definition:

22 ~~**Authority Having Jurisdiction.** Unless specify otherwise in this code, the term "Authority Having Jurisdiction"~~
23 ~~has the same meaning as the "Administrative Authority".~~

24 **4715.0205 – C –**

25 **Subpart 1. Amended definitions.** UPC Section 205.0 is modified by amending the following definitions:

26 ~~**Certified Backflow Assembly Tester.** Has the same meaning as "Backflow prevention tester" defined in~~
27 ~~Minnesota Statutes, 326B.42, Subd. 1c.~~

28 ~~**Clear Water Waste.** Uncontaminated water discharges, subsoil discharges and similar discharges.~~

29 **4715.0206 – D –**

30 **Subpart 1. Amended definitions.** Section 206.0 UPC Section 206.0 is modified by amending the following
31 definition:

32 ~~**Drainage System.** Includes all the piping within public or private premises that conveys sewage, rainwater, or other~~
33 ~~liquid wastes to a legal point of disposal, but does not include the mains of a public sewer system or a public sewage~~
34 ~~treatment or disposal plant.~~

35 **4715.0210 – H –**

36 **Subpart 1. Amended definitions.** Section 210.0 UPC Section 210.0 is modified by amending the following
37 definition:

38
39 ~~**Hydromechanical Grease Interceptor.** A plumbing appurtenance or appliance that is installed in a sanitary~~
40 ~~drainage system to intercept nonpetroleum fats, oil, and grease (FOG) from a wastewater discharge and is identified~~
41 ~~by flow rate, and separation and retention efficiency. The design incorporates air entrainment, hydromechanical~~
42 ~~separation, interior baffling, or barriers in combination or separately, and one of the following:~~

43 ~~A - External flow control, with air intake (vent), directly connected.~~

44 ~~B - External flow control, without air intake (vent), directly connected.~~

45 ~~C - Without external flow control, directly connected.~~

46 ~~These interceptors comply with the requirements of Table 1014.2.1. Hydromechanical grease interceptors are~~
47 ~~generally installed inside.~~

48
49 **Subpart 2. Added definitions.** Section 210.0 UPC Section 210.0 is modified by adding the following definition:

50 ~~**Health Authority.** Means the State Health Department or local public health agency which has authority established~~
51 ~~under law to enforce rules governing drinking water supply.~~

1 **4715.0218 – P –**

2 Subpart 1. Amended definitions. Section 218.0 UPC Section 218.0 is modified by amending the following
3 definitions:

4
5 **Plumbing System.** Includes all potable water, building supply, and distribution pipes; all plumbing fixtures and
6 traps; all drainage and vent pipes; and all building drains and building sewers, including their respective joints and
7 connections, devices, receptors, and appurtenances within the property lines of the premises and shall include
8 potable water piping, potable water treating or using equipment, and nonpotable water piping serving plumbing
9 fixtures.

10
11 **Potable Water.** Water that is satisfactory for drinking, culinary, and domestic purposes and that meets the
12 requirements of the Health Authority.

13
14 **Private Sewage Disposal System.** A subsurface sewage treatment system septic tank with the effluent discharging
15 into a subsurface disposal field, into one or more seepage pits, or into a combination of subsurface disposal field and
16 seepage pit designed for use apart from a public sewer as regulated under the rules administered by the Minnesota
17 Pollution Control Agency. This system is also referred to as Subsurface Sewage Treatment System (SSTS).

18 **4715.0221 – S –**

19 Subpart 1. Amended definitions. Section 221.0 UPC Section 221.0 is modified by amending the following
20 definition:

21
22 **Single-Family Dwelling.** Has the meaning of dwelling, single-family in Minnesota Rules 1309.0202, subpart 1.

23 **4715.0301 SECTION 301.0 MATERIALS – STANDARDS AND ALTERNATES**

24 Subp. 1. Section 301.1. UPC section 301.1 is amended to read as follows:

25 **301.1 Minimum Standards.** Pipe, pipe fittings, traps, fixtures, material, and devices used in a plumbing system
26 shall be listed or labeled (third-party certified) by a listing agency (accredited conformity assessment body) and shall
27 comply with the approved applicable recognized standards referenced in this code, and shall be free from defects.
28 Plastic pipe and the fittings used for plastic pipe, shall meet the requirements of NSF 14. Unless otherwise provided
29 for in this code, materials, fixtures, or devices used or entering into the construction of plumbing systems, or parts
30 thereof, shall be submitted to the Authority Having Jurisdiction for approval.

31 **301.1.1 Marking.** Each length of pipe and each pipe fitting, trap, fixture, material, and device used in a
32 plumbing system shall have cast, stamped, or indelibly marked on it the manufacturer's mark or name, which
33 shall readily identify the manufacturer to the end user of the product. Where required by the approved standard
34 that applies, the product shall be marked with the weight and the quality of the product. Materials and devices
35 used or entering into the construction of plumbing and drainage systems, or parts thereof, shall be marked and
36 identified in a manner satisfactory to the Authority Having Jurisdiction. Such marking shall be done by the
37 manufacturer. Field markings shall not be acceptable.

38 **301.1.2 Standards.** Standards listed or referred to in this chapter or other chapters cover materials that will
39 conform to the requirements of this code, where used in accordance with the limitations imposed in this or other
40 chapters thereof and their listing. Where a standard covers materials of various grades, weights, quality, or
41 configurations, the portion of the listed standard that is applicable shall be used. Design and materials for
42 special conditions or materials not provided for herein shall be permitted to be used only by special permission
43 of the Authority Having Jurisdiction after the Authority Having Jurisdiction has been satisfied as to their
44 adequacy. A list of accepted plumbing material standards is referenced in Table 1401.1.

45
46 Subp. 2. Section 301.2. UPC section 301.2 is amended to read as follows:

47 **301.2 Alternate Materials and Methods of Construction Equivalency.** Nothing in this code is intended to prevent
48 the use of systems, methods, or devices of equivalent or superior quality, strength, fire resistance, effectiveness,
49 durability, and safety over those prescribed by this code. Prior to installation, technical documentation shall be
50 submitted to the Authority Having Jurisdiction to demonstrate equivalency. Unless prohibited by this code or by

1 law, the Authority Having Jurisdiction shall have the authority to approve or disapprove the system, method, or
2 device for the intended purpose.

3 However, the exercise of this discretionary approval by the Authority Having Jurisdiction shall have no effect
4 beyond the jurisdictional boundaries of said Authority Having Jurisdiction. An alternate material or method of
5 construction so approved shall not be considered as in accordance with the requirements, intent, or both of this code
6 for a purpose other than that granted by the Authority Having Jurisdiction where the submitted data does not prove
7 equivalency.

8
9 Subp. 3. **Section 301.4.6.** UPC section 301.4.6 is amended to read as follows:

10 **301.4.6 Inspection and Testing.** The alternative engineered design shall be tested and inspected in accordance with
11 the submitted testing and inspection plan and the requirements of this code. Prior to the final plumbing inspection,
12 the design engineer must provide written certification to the administrative authority that the system has been
13 visually inspected by the design professional engineer or their designee, and the installation has been properly
14 implemented according to the certified plans, calculations, and specification.

15
16 **4715.0307 LOCATION**

17 **Section 307.1.** UPC section 307.1 is amended to read as follows:

18 **307.1 System.** Except as otherwise provided in this code, no plumbing system, drainage system, building sewer, or
19 parts thereof shall be located in a lot other than the lot that is the site of the building, structure, or premises served by
20 such facilities.

21 **4715.0311 INDEPENDENT SYSTEMS**

22 Subp. 1. **Section 311.0.** UPC section 311.0 title is amended to read as follows:

23 **311.0 Use of Public Sewer and Water Systems Required**

24
25 Subp. 2. **Section 311.1.** UPC section 311.1 is amended to read as follows:

26 **311.1 General.** If a public sewer is available in a street or alley to a building or premises and the connection is
27 feasible, liquid waste from any plumbing system in that building must be discharged into the public sewer unless
28 otherwise prohibited by this code or a local ordinance. If a public water supply is accessible, the water distribution
29 system must be connected to it unless otherwise permitted by the Authority Having Jurisdiction. A private water
30 well taken out of service because of a connection to a public water supply shall be maintained pursuant to Minnesota
31 Rules chapter 4725, Minnesota Water Well Code.

32
33 Every building must have its own independent water and sewer connection except that a group of buildings may be
34 connected to one or more sewer manholes on the premises which are constructed to standards set by the authority
35 having jurisdiction

36
37 **4715.0312 PROTECTION OF PIPING, MATERIALS, AND STRUCTURES**

38 Subp. 1. **Section 312.7.** UPC section 312.7 is amended to read as follows:

39 **312.7 Fire-Resistant Construction.** Piping penetrations of fire-resistance-rated walls, partitions, floors,
40 floor/ceiling assemblies, roof/ceiling assemblies, or shaft enclosures shall be protected in accordance with the
41 requirements of the building code.

42
43 Subp. 2. **Section 312.9.** UPC section 312.9 is amended to read as follows:

44 **312.9 Steel Nail Plates.** Plastic and copper piping penetrating framing members to within 1 inch (25.4 mm) of the
45 exposed framing shall be protected by steel nail plates not less than No. 18 gauge (0.0478 inches) (1.2 mm) in
46 thickness. The steel nail plate shall extend along the framing member not less than 1½ inches (38 mm) beyond the
47 outside diameter of the pipe or tubing.

1 **Exception:** See Minnesota Mechanical Code, [Minnesota Rules, chapter 1346](#).

2
3 **4715.0313 HANGERS AND SUPPORTS**

4 **Section 313.7.** UPC section 313.7 is deleted.

5
6 **4715.0314 TRENCHING, EXCAVATION, AND BACKFILL**

7 **Sections 314.0 to 314.4.** UPC sections 314.0 to 314.4 are deleted in their entirety.

8
9 **4715.0315 JOINTS AND CONNECTIONS**

10 **Section 315.1.** UPC section 315.1 is amended to read as follows:

11 **315.1 Unions.** Approved unions shall be permitted to be used in drainage piping where accessibly located in the trap
12 seal or between a fixture and its trap in the vent system, except underground or in wet vents, at a point in the water
13 supply system.

14
15 **4715.0317 FOOD-HANDLING ESTABLISHMENTS**

16 **Section 317.1.** UPC section 317.1 is amended to read as follows:

17 **317.1 General.** Food or drink shall not be stored, prepared, or displayed beneath soil or drain pipes, unless those
18 areas are protected against leakage or condensation from such pipes reaching the food or drink as described below.
19 Soil drain pipes in facilities regulated by Minnesota Rules, Chapter 4626 must have the pipes shielded in accordance
20 with part 4626.0960. Where building design requires that soil or drain pipes installed be located over such areas
21 where food or drink will be stored, prepared, or displayed, the installation shall be made installed with the least
22 minimum possible number of joints necessary and shall be installed so as to connected to the nearest adequately
23 sized vertical stack with the following provisions as follows:

24 **(1) Plumbing** Openings through floors over such areas shall be sealed watertight to the floor construction.

25 **(2)** Floor and shower drains installed above such areas shall be equipped with integral seepage pans.

26 **(3)** Soil or drain pipes shall be of an approved material as listed in Table 1401.1 and Section 701.1. Cleanouts shall
27 be extended through the floor construction above.

28 **(4)** Piping subject to operation at temperatures that will form condensation on the exterior of the pipe shall be
29 thermally insulated.

30 **(5)** Where pipes are installed in ceilings above such areas, the ceiling shall be of the removable type, or shall be
31 provided with access panels in order to form a ready access for inspection of piping.

32
33 **4715.0319 MEDICAL GAS AND VACUUM SYSTEMS**

34 **Sections 319.0 to 319.1.** UPC sections 319.0 to 319.1 are deleted in their entirety.

35 **4715.0403 WATER-CONSERVING FIXTURES AND FITTINGS**

36 **Section 403.3.** UPC section 403.3 is amended to read as follows:

37 **403.3 Urinals.** Urinals shall have an average water consumption not to exceed 1 gallon (4 L) of water per flush.

38 **403.3.1 Nonwater Urinals.** Nonwater urinals shall be listed and comply with the applicable standards
39 referenced in Table 1401.1. Nonwater urinals shall have a barrier liquid sealant to maintain a trap seal.
40 Nonwater urinals shall permit the uninhibited flow of waste through the urinal to the sanitary drainage system.
41 Nonwater urinals shall be cleaned and maintained in accordance with the manufacturer's instructions after
42 installation. Where a nonwater urinal is installed, a water supplied fixture shall be installed upstream of the
43 nonwater urinal at the end of that same drainage branch.

44 **4715.0406 PROHIBITED FIXTURES**

45 **Section 406.3.** UPC section 406.3 is deleted in its entirety.

46 **4715.0409 BATHTUBS AND WHIRLPOOL BATHTUBS**

47 **Section 409.1.** UPC section 409.1 is amended to read as follows:

1 **409.1 Application.** Bathtubs and whirlpool bathtubs shall comply with the applicable standards referenced in Table
2 1401.1. Pressure sealed doors within a bathtub or whirlpool bathtub enclosure shall comply with the applicable
3 standards referenced in Table 1401.1. Whirlpool pedicure tubs must comply with general requirements and water
4 retention sections of ASME A112.9.7 or IAPMO IGC 155, Pipeless Whirlpool Bathtub Appliances.

5 **4715.0415 DRINKING FOUNTAINS**

6 **Section 415.2.** UPC section 415.2 is amended to read as follows:

7 **415.2 Public Use Fountains.** Installation of a combined cold water faucet and drinking fountain is prohibited for
8 public use. If a drinking fountain is provided at a public use sink, it must have at least an 18-inch separation from
9 any other faucet spout.

10 **4715.0418 FLOOR DRAINS**

11 **Subp 1. Section 418.4.** UPC section 418.4 is amended to read as follows:

12 **418.4 Food Storage Areas.** Where drains are provided in storerooms, walk-in freezers, walk-in coolers, refrigerated
13 equipment, or other locations where food is stored, such drains shall have indirect waste piping. Floor drains are
14 prohibited in retail food service refrigeration systems according to part 4626.1190 and ANSI/NSF Standard 7 as
15 referenced in Chapter 4626. Separate waste pipes shall be run from each food storage area, each with an indirect
16 connection to the building sanitary drainage system. Traps shall be provided in accordance with Section 801.2.2 of
17 this code and shall be vented.

18 Indirect drains shall be permitted to be located in freezers or other spaces where freezing temperatures are
19 maintained, provided that traps, where supplied, shall be located where the seal will not freeze. Otherwise, the floor
20 of the freezer shall be sloped to a floor drain located outside of the storage compartment.

21 **Subp. 2. Section 418.** UPC section 418 is amended by adding the following subsections.

22
23 **418.6 Elevator Pit Drain.** An elevator pit drain must discharge to the sanitary sewer using an indirect connection
24 that precludes the possibility of sewage backup into the pit. If a sump is used, it must be outside the pit with a dry
25 pan drain flowing to it.

26 **418.7 Garage and Parking Area Floor Drains.** Floor area drains in open parking areas, including open areas of
27 parking ramps, must discharge to the storm sewer or to a place of disposal satisfactory to the sewer authority. Floor
28 drains in parking areas which are enclosed, and floor drains in areas open or enclosed which are used for
29 maintenance or as a vehicle wash bay, must discharge to the sanitary sewer if a municipal sewer is available. Oil and
30 flammable liquid interceptor must be provided if required by UPC section 1017.

31 **Exception:** Floor drains in private garages serving one- and two-family dwellings may discharge to daylight if
32 approved by the administrative authority.

33 **4715.0420 SINKS.**

34 **Section 420.3.** UPC section 420.3 is amended to read as follows:

35 **420.3 Waste Outlet.** Kitchen and laundry sinks shall have a waste outlet and fixture tailpiece not less than 1½
36 inches (40 mm) in diameter, except commercial pot and scullery sinks must be provided with waste outlets not less
37 than 2 inches in diameter. Service sinks shall have a waste outlet and fixture tailpiece not less than 2 inches (50 mm)
38 in diameter. Fixture tailpieces shall be constructed from the materials specified in Section 701.1 for drainage piping,
39 provided, however, that such connections where exposed or accessible shall be permitted to be of seamless drawn
40 brass not less than No. 20 B & S Gauge (0.032 inches) (0.81 mm). Waste outlets shall be provided with an approved
41 strainer.

42 **4715.0421 FIXTURES AND FIXTURE FITTINGS FOR PERSONS WITH DISABILITIES.**

43 **Section 421.2.** UPC section 421.2 is amended to read as follows:

44 **421.2 Limitation of Hot Water Temperature for Public Lavatories.** Hot water delivered from public-use
45 lavatories shall be limited to a maximum temperature of 110 F (43°C) by a device that is in accordance with

1 ASSE 1070 or CSA B125.3. The water heater thermostat shall not be considered a control for meeting this
2 provision.

3 **4715.0422 MINIMUM NUMBER OF REQUIRED FIXTURES**

4 Subp. 1. Section 422.1. UPC section 422.1 is amended to read as follows:

5 **422.1 Required Minimum Number of Fixtures.** For all premises subject to this chapter, plumbing fixtures shall be
6 provided for the type of building occupancy and in the minimum number listed in chapter 1305, Minnesota
7 Building Code.

8
9 Subp. 2. Sections 422.1.1 to 422.5. UPC sections 422.1.1 to 422.5, including tables, are deleted in their entirety.

10
11 Subp. 3. UPC Table 422.1 is deleted.

12 **4715.0501 GENERAL.**

13 Section 501.1. UPC section 501.1 is amended to read as follows:

14 **501.1 Applicability.** The regulations of this chapter shall govern the construction, location, and installation of fuel-
15 burning and other water heaters heating potable water. The minimum capacity for storage water heaters shall be in
16 accordance with the first hour rating listed in Table 501.1. Design, construction, and workmanship shall be in
17 accordance with accepted engineering practices, manufacturer's instructions, and applicable standards and shall be
18 of such character as to secure the results sought to be obtained by this code. No water heater shall be hereinafter
19 installed that does not comply with the type and model of each size thereof approved by the Authority Having
20 Jurisdiction.

21 **4715.0503 INSPECTION.**

22 Sections 503.0 to 503.2. UPC sections 503.0 to 503.2 are deleted in their entirety.

23 **4715.0504 WATER HEATER REQUIREMENTS.**

24 Subp. 1. Sections 504.1 to 504.2. UPC sections 504.1 to 504.2 are deleted in their entirety.

25 Subp. 2. Section 504.6. UPC section 504.6 is amended to read as follows:

26 **504.6 Temperature, Pressure, and Vacuum Relief Devices.** The installation of temperature, pressure, and vacuum
27 relief devices or combinations thereof, shall be installed in accordance with the terms of their listings and the
28 manufacturer's installation instructions. A shutoff valve shall not be placed between the relief valve and the water
29 heater or on discharge pipes between such valves and the atmosphere. The hourly British thermal units (Btu) (kW•h)
30 discharge capacity or the rated steam relief capacity of the device shall be not less than the input rating of the water
31 heater. [NFPA 54:10.28.5]

32 **4715.0505 OIL-BURNING AND OTHER WATER HEATERS.**

33 Section 505.4.1. UPC section 505.4.1 is deleted in its entirety.

34 **4715.0506 AIR FOR COMBUSTION AND VENTILATION.**

35 Sections 506.0 to 506.9. UPC sections 506.0 to 506.9 are deleted in their entirety.

36 **4715.0507 OTHER WATER HEATER INSTALLATION REQUIREMENTS.**

37 Subp. 1. Sections 507.6 to 507.11 and 507.14 to 507.23. UPC sections 507.6 to 507.11 and sections 507.14 to
38 507.23 are deleted in their entirety.

39 Subp. 2. Section 507.5. UPC section 507.5 is amended to read as follows:

40 **507.5 Relief Valve Discharge.** Discharge from a relief valve into a water heater pan shall be prohibited. Discharge
41 relief valve shall terminate within 18 inches of:

- 42 1. the floor or
43 2. a safe place of disposal.

44 **4715.0508 APPLIANCES ON ROOFS.**

45 Sections 508.0 to 508.4. UPC sections 508.0 to 508.4 are deleted in their entirety.

1 **4715.0509 VENTING OF APPLIANCES.**

2 **Sections 509.0 to 509.14.** UPC sections 509.0 to 509.14, including all tables and figures, are deleted in their
3 entirety.

4 **4715.0510 SIZING OF CATEGORY I VENTING SYSTEMS.**

5 **Sections 510.0 to 510.2.** UPC sections 510.0 to 510.2, including all tables and figures, are deleted in their entirety.

6 **4715.0511 DIRECT-VENT APPLIANCES.**

7 **Sections 511.0 to 511.1.** UPC sections 511.0 to 511.1 are deleted in their entirety.
8

9 **4715.0601 HOT AND COLD WATER REQUIRED**

10 **Section 601.** UPC section 601 is amended to read as follows:

11 **601.0 Hot and Cold Water Required.**

12 **601.1 General.** Except where not deemed necessary for safety or sanitation by the Authority Having Jurisdiction, each
13 plumbing fixture shall be provided with an adequate supply of potable running water piped thereto in an approved manner,
14 so arranged as to flush and keep it in a clean and sanitary condition without danger of backflow or cross-connection. Water
15 closets and urinals shall be flushed by means of an approved flush tank or flushometer valve.,

16 **Exception:** Listed fixtures that do not require water for their operation and are not connected to the water supply.

17 In occupancies where plumbing fixtures are installed for private use, hot water shall be required for bathing, washing,
18 laundry, cooking purposes, dishwashing or maintenance. In occupancies where plumbing fixtures are installed for public
19 use, hot water shall be required for bathing and washing purposes. This requirement shall not supersede the requirements
20 for individual temperature control limitations for public lavatories, bidets, bathtubs, whirlpool bathtubs and shower control
21 valves.

22 Hot water supply systems in four-story buildings or higher, or buildings where the developed length of hot water
23 pipng from the source of hot water supply to the farthest fixture supplied exceeds 100 feet shall be of the return
24 circulation type.

25 **4715.0602 UNLAWFUL CONNECTIONS**

26 Subp. 1. **Section 602.2.** UPC section 602.2 is amended to read as follows:

27 **602.2 Cross-Contamination.** No person shall make a connection or allow one to exist between pipes or conduits
28 carrying domestic water supplied by a public or private building supply system, and pipes, conduits, or fixtures
29 containing or carrying water from any other source or containing or carrying water that has been used for a purpose
30 whatsoever, or piping carrying chemicals, liquids, gases, or substances whatsoever, unless there is provided a
31 backflow prevention device approved for the potential hazard and maintained in accordance with this code. Each
32 point of use shall be separately protected where potential cross-contamination of individual units exists. Water used
33 for cooling or heating of equipment or other purposes shall not be returned to the potable water system. Such water
34 shall be discharged into the drainage system through an air gapped indirect waste or other approved method of
35 disposal.
36

37 Subp. 2. **Section 602.4.** UPC section 602.4 is amended to read as follows:

38 **602.4 Approval by Authority.** No water piping supplied by a private water supply system shall be connected to any
39 other source of supply without the approval of the Authority Having Jurisdiction.

40 **4715.0603 CROSS-CONNECTION CONTROL**

41 Subp. 1. **Section 603.2.** UPC section 603.2 is amended to read as follows:

42 **603.2 Approval of Devices or Assemblies.** Before a device or an assembly is installed for the prevention of
43 backflow, it shall have first been approved by the Authority Having Jurisdiction. Devices or assemblies shall be
44 tested in accordance with recognized standards or other standards acceptable to the Authority Having Jurisdiction.
45 Backflow prevention devices and assemblies shall comply with Table 603.2, except for specific applications and
46 provisions as stated in Section 603.5.1 through Section 603.5.21.

47 Devices or assemblies installed in a potable water supply system for protection against backflow shall be
48 maintained in good working condition by the person or persons having control of such devices or assemblies. Such
49 devices or assemblies shall be tested at the time of installation, repair, or relocation and not less than on an annual
50 schedule thereafter, or more often where required by the Authority Having Jurisdiction. Where found to be defective

1 or inoperative, the device or assembly shall be repaired or replaced. No device or assembly shall be removed from
2 use or relocated or other device or assembly substituted, without the approval of the Authority Having Jurisdiction.
3 Testing shall be performed by a certified backflow assembly tester in accordance with ASSE Series 5000.

4
5 Subp. 2. **Section 603.5.4.** UPC section 603.5.4 is amended to read as follows:

6
7 **603.5.4 Heat Exchangers.** Heat exchangers used for heat transfer, heat recovery, or solar heating shall protect
8 the potable water system from being contaminated by the heat-transfer medium.

9 **603.5.4.1 Single-Wall Heat Exchanger.** Installation of a single-wall heat exchanger shall meet all of the
10 following requirements:

11 (1)Connected to a low-pressure hot water boiler limited to a maximum of 30 pounds-force per square inch
12 gauge (psig) (207 kPa) by an approved safety or relief valve.

13 (2)Heater transfer medium is either potable water or contains fluids having a toxicity rating or Class of 1.

14 (3)Bear a label with the word "Caution," followed by the following statements:

15 (a)The heat-transfer medium shall be water or other nontoxic fluid having a toxic rating or Class of 1 as
16 listed in Clinical Toxicology of Commercial Products, 5th edition.

17 (b)The pressure of the heat-transfer medium shall be limited to a maximum of 30 psig (207 kPa) by an
18 approved safety or relief valve.

19 The word "Caution" and the statements in letters shall have an uppercase height of not less than 0.120 of an
20 inch (3.048 mm). The vertical spacing between lines of type shall be not less than 0.046 of an inch (1.168
21 mm). Lowercase letters shall be compatible with the uppercase letter size specification.

22 (4)A reduced-pressure principle backflow prevention assembly shall be installed on the building supply
23 before the first branch

24 **603.5.4.2 Double-Wall Heat Exchanger** Double-wall heat exchangers shall separate the potable water from
25 the heat-transfer medium by providing a space between the two walls that are vented to the atmosphere.

26
27 Subp. 3. **Section 603.5.12.** UPC section 603.5.12 is amended to read as follows:

28 **603.5.12 Beverage Dispensers.** Potable water supply to beverage dispensers, carbonated beverage dispensers,
29 or coffee machines shall be protected by an air gap or a vented backflow preventer in accordance with ASSE
30 1022. For carbonated beverage dispensers, piping materials installed downstream of the backflow preventer
31 shall not be made of copper and not be affected by carbon dioxide gas.

32
33 Subp. 4. **Section 603.5.18.** UPC section 603.5.18 is amended to read as follows:

34
35 **603.5.18 Potable Water Outlets and Valves.** Potable water outlets, freeze-proof yard hydrants, combination
36 stop-and-waste valves, or other fixtures that incorporate a stop and waste feature that drains into the ground
37 shall not be installed underground except for a freeze-proof yard hydrant that is located at least two feet above
38 the water table and at least 10 feet from any sewer or similar source of contamination.

39
40 Subp. 5. **Section 603.5.** UPC section 603.5 is amended by adding the following subsections:

41 **603.5.22, Barometric Loop.** Water connections where an actual or potential backflow or backsiphonage hazard
42 exists not subject to backpressure may be protected with a barometric loop. A barometric loop is a section of pipe in
43 the shape of an inverted "u" located upstream and rising 35 feet above the highest fixture it supplies.

44
45 **603.5.23, Installation of Testable Backflow Prevention Assembly.** Testable backflow prevention assemblies
46 meeting ASSE Standard 1013, 1015, 1020, 1047, 1048, or 1056 must be installed, tested, maintained, and removed
47 in accordance with section 603.5.23.1 through section 603.5.23.4.

48
49 **603.5.23.1, Notification of installation.** The administrative authority must be notified before installation of a
50 testable backflow prevention assembly. The public water supplier must be notified of the installed testable
51 backflow preventer assembly within 30 days following installation on a community public water system.

52
53 **603.5.23.2, Testing and maintenance.** The installation of a testable backflow prevention assembly shall be
54 permitted only when a periodic testing and inspection program conducted by qualified personnel will be

1 provided by an agency acceptable to the administrative authority. Inspection intervals shall not exceed one year.
2 The administrative authority may require more frequent testing if deemed necessary to assure protection of the
3 potable water. A testable backflow prevention assembly must be inspected after initial installation to assure that
4 it has been properly installed and that debris resulting from the piping installation has not interfered with the
5 functioning of the assembly.

6
7 **603.5.23.3, Inspection and records.** A test and inspection tag must be affixed to the testable backflow
8 prevention assembly. The tester shall date and sign the tag and include the tester's backflow prevention tester
9 certification number. Written records of testing and maintenance must be maintained and submitted to the
10 administrative authority, and to the public water supplier within 30 days of testing if installed on a community
11 public water system.

12
13 **603.5.23.4, Notification of removal.** The authority having jurisdiction, in addition to, the public water supplier
14 must be notified within 30 days following removal of a testable backflow prevention assembly from a
15 community public water system.

16 **4715.0604 MATERIALS**

17 **Section 604.11.** UPC section 604.11 is amended to read as follows:

18
19 **604.11 Lead Content.** Water pipe and fittings with a lead content which exceeds a weighted average of 0.25 percent
20 in the wetted surface material, as established in the Safe Drinking Water Act, section 1417(d) shall be prohibited in
21 piping systems used to convey potable water.

22 **4715.0608 WATER PRESSURE, PRESSURE REGULATORS, PRESSURE RELIEF VALVES, AND**
23 **VACUUM RELIEF VALVES**

24 **Section 608.5.** UPC section 608.5 is amended to read as follows:

25 **608.5 Drains.** Relief valves located inside a building shall be provided with a drain, not smaller than the relief valve
26 outlet, of galvanized steel, hard-drawn copper piping and fittings, CPVC, PP, or listed relief valve drain tube with
27 fittings that will not reduce the internal bore of the pipe or tubing (straight lengths as opposed to coils) and shall
28 terminate within 18 inches of:

- 29 1. the floor or
30 2. a safe place of disposal.

31 Relief valve drains shall not terminate in a building's crawl space. No part of such drain pipe shall be trapped or
32 subject to freezing. The terminal end of the drain pipe shall not be threaded.

33 **4715.0609 INSTALLATION, TESTING, UNIONS, AND LOCATION**

34 **Subp. 1. Section 609.6.** UPC section 609.6 is amended to read as follows:

35
36 **609.6 Location.** Except as provided in Section 609.7, no building supply shall be located in a lot other than the lot
37 that is the site of the building or structure served by such building supply.

38 **609.6.1 Water supply near sources of pollution.** Potable water supply pipes must not be located in, under, or
39 above cesspools, septic tanks, septic tank drainage fields, seepage pits, soil treatment systems, contaminated soil,
40 sewer manholes, catch basins, storm water storage tanks, buried tanks containing chemicals or petroleum
41 products, or any other source of pollution that in the judgment of the administrative authority might contaminate
42 the potable water supply. A horizontal separation of ten feet must be maintained between the outer edge of the
43 water supply pipe and the outer edge of the contamination source.

44
45 **Subp. 2. Section 609.** UPC section 609 is amended by adding the following subsection:

46 **Section 609.11. Water Meters.** Water meters shall be located inside a building and installed at least 12 inches
47 above the finished floor and shall be readily accessible. All water meter installations shall be rigidly supported with
48 a permanent support in order to prevent the meter from vibrating when the water is passing through it.

49
50 **Exceptions:** Where installation inside a building is not possible, the water meter may be installed in an enclosed
51 structure not subject to flooding, high groundwater, or surface drainage runoff, provided the meter is protected from
52 freezing. Provisions shall be made to install the meters above grade when possible. When installed below grade,

1 the top of the structure shall be located at least 12 inches above the finished grade, be secured, and accessible. This
 2 structure shall not be connected to any storm or sanitary sewer system.

3 **4715.0610 SIZE OF POTABLE WATER PIPING**

4 **Section 610.** UPC Table 610.3 is amended to read as follows:
 5

TABLE 610.3
WATER SUPPLY FIXTURE UNITS (WSFU) AND MINIMUM FIXTURE BRANCH PIPE SIZES³

APPLIANCES, APPURTENANCES OR FIXTURES ²	MINIMUM FIXTURE BRANCH PIPE SIZE ^{1,4}	PRIVATE	PUBLIC	ASSEMBLY ⁶
	(inches)			
Bathtub or Combination Bath/Shower (fill)	$\frac{1}{2}$	4.0 ^{1,4}	4.0	==
$\frac{3}{4}$ inch Bathtub Fill Valve	$\frac{3}{4}$	10.0	10.0	==
Bidet	$\frac{1}{2}$	1.0	==	==
Clothes Washer	$\frac{1}{2}$	4.0	4.0	==
Dental Unit, cuspidor	$\frac{1}{2}$	==	1.0	==
Dishwasher, domestic	$\frac{1}{2}$	1.5	1.5	==
Drinking Fountain or Water Cooler	$\frac{1}{2}$	0.5	0.5	0.75
Hose Bibb	$\frac{1}{2}$	2.5	2.5	==
Hose Bibb, each additional ⁸	$\frac{1}{2}$	1.0	1.0	==
<u>Lavatory (each basin), or hand sink</u>	$\frac{1}{2}$	1.0	1.0	1.0
Lawn Sprinkler, each head ⁵	==	1.0	1.0	==
Mobile Home, each (minimum)	==	12.0	==	==
Sinks	==	==	==	==
Bar	$\frac{1}{2}$	1.0	2.0	==
Clinic Faucet	$\frac{1}{2}$	==	3.0	==
Clinic Flushometer Valve with or without faucet	1	==	8.0	==
Kitchen, domestic with or without dishwasher	$\frac{1}{2}$	1.5	1.5	==
Laundry	$\frac{1}{2}$	1.5	1.5	==
Service or Mop Basin	$\frac{1}{2}$	1.5	3.0	==
Washup, each set of faucets	$\frac{1}{2}$	==	2.0	==
Shower, per head	$\frac{1}{2}$	2.0	2.0	==
Urinal, 1.0 GPF Flushometer Valve	$\frac{3}{4}$	See Footnote ⁷		==
Urinal, greater than 1.0 GPF Flushometer Valve	$\frac{3}{4}$	See Footnote ⁷		==
Urinal, flush tank	$\frac{1}{2}$	2.0	2.0	3.0
Wash Fountain, circular spray	$\frac{3}{4}$	==	4.0	==
Water Closet, 1.6 GPF Gravity Tank	$\frac{1}{2}$	2.5	2.5	3.5
Water Closet, 1.6 GPF Flushometer Tank	$\frac{1}{2}$	2.5	2.5	3.5
Water Closet, 1.6 GPF Flushometer Valve	1	See Footnote ⁷		==
Water Closet, greater than 1.6 GPF Gravity Tank	$\frac{1}{2}$	3.0	5.5	7.0
Water Closet, greater than 1.6 GPF Flushometer Valve	1	See Footnote ⁷		==

For SI units: 1 inch = 25 mm

Notes:

¹ Size of the cold branch pipe, or both the hot and cold branch pipes.

² Appliances, appurtenances, or fixtures not referenced in this table shall be permitted to be sized by reference to fixtures having a similar flow rate and frequency of use.

³ The listed fixture unit values represent their load on the cold water building supply. The separate cold water and hot water fixture unit value for fixtures having both hot and cold water connections shall be permitted to be each taken as three-quarter of the listed total value of the fixture.

⁴ The listed minimum supply branch pipe sizes for individual fixtures are the nominal (I.D.) pipe size.

⁵ For fixtures or supply connections likely to impose continuous flow demands, determine the required flow in gallons per minute (gpm) (L/s), and add it separately to the demand in gpm (L/s) for the distribution system or portions thereof.

⁶ Assembly [Public Use]. See Minnesota Rules, chapter 1305, Minnesota Building Code

⁷ Where sizing flushometer systems, see Section 610.10.

⁸ Reduced fixture unit loading for additional hose bibbs is to be used where sizing total building demand and for pipe sizing where more than one hose bibb is supplied by a segment of water distribution pipe. The fixture branch to each hose bibb shall be sized on the basis of 2.5 fixture units.

1 **4715.0611 WATER CONDITIONING EQUIPMENT.**

2 **Section 611.** UPC sections 611.0 to 611.3 are amended to read as follows:

3 **611.0 Water Conditioning Equipment.**

4 **611.1 Application.** Water conditioning equipment shall comply with the requirements in this section.

5
6 **611.1.1 Definition.** Water conditioning equipment means any appliance, appurtenance, or fixture, or any combination thereof, designed to treat potable water, so as to alter, modify, add, or remove any minerals, chemicals, or bacteria contained in water. Water conditioning equipment includes but is not limited to ion exchange water softeners, backwashing water filters, oxidizing water filters, cartridge filters, chemical feed cartridges, ultraviolet lights, and equipment for reverse osmosis, ultrafiltration, nanofiltration, pH adjustment, nitrate and arsenic removal and adsorption onto activated carbon.

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13 **611.1.2 Manufacture and Assembly.** Water conditioning equipment may be manufactured as a complete system or may be assembled as a complete system by a licensed plumber or licensed water conditioning contractor using various types of water conditioning equipment. Wetted materials used in water conditioning equipment shall comply with ANSI/NSF61 standards, or the equipment shall comply with the applicable NSF standards as listed in Table 1401.1.

14
15
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18 **Exception:** Water conditioning equipment intended to treat water for non-potable uses that are protected by an approved backflow device, assembly, or method as required in Chapter 6 of this code.

19
20
21 **611.1.3 Labeling.** All conditioning equipment must be labeled by the manufacturer, licensed plumber or by the licensed water conditioning contractor who manufactured or assembled the equipment so as to clearly identify the type of equipment and the name and address of the manufacturer, licensed plumber or licensed contractor who manufactured or assembled the equipment.

22
23
24
25
26 **611.2 Airgap Discharge.** Any discharge from water conditioning equipment shall enter the drainage system through an airgap in accordance with Table 603.3.1 or an airgap device in accordance with Table 603.2, NSF 58, or IAPMO PS 65.

27
28
29
30 **611.3 Connection Tubing.** The tubing to and from water conditioning units shall be of a size and material as recommended by the manufacturer. The tubing shall comply with the requirements of NSF 14, NSF 42, NSF 44, NSF 53, NSF 55, NSF 58, NSF 62 or the appropriate material standards referenced in Table 1401.1.

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32
33
34
35 **4715.0701 MATERIALS**

36 **Section 701.1.** UPC section 701.1 is amended to read as follows:

37 **701.1 Drainage Piping.** **Materials for drainage piping shall be in accordance with one of the referenced standards in Table 701.1 except that:**

- 38
39 **(1)** No galvanized wrought-iron or galvanized steel pipe shall be used underground and shall be kept not less than 6 inches (152 mm) aboveground.
- 40
41 **(2)** ABS and PVC DWV piping installations shall be installed in accordance with applicable standards referenced in Table 1401.1.
- 42
43 **(3)** No vitrified clay pipe or fittings shall be used aboveground or where pressurized by a pump or ejector. They shall be kept not less than 12 inches (305 mm) belowground.
- 44

- 1 **(4) Copper tube for drainage and vent piping shall have a weight of not less than that of copper drainage tube type**
 2 **DWV.**
 3 **(5) Stainless steel 304 pipe and fittings shall not be installed underground and shall be kept not less than 6 inches**
 4 **(152 mm) aboveground.**
 5 **(6) Cast-iron soil pipe and fittings shall be listed and tested in accordance with standards referenced in Table**
 6 **1401.1. Such pipe and fittings shall be marked with country of origin and identification of the original**
 7 **manufacturer in addition to markings required by referenced standards.**

8 **4715.0702 FIXTURE UNIT EQUIVALENTS**

9 **Section 702. UPC Table 702.1 is amended to read as follows:**

TABLE 702.1

DRAINAGE FIXTURE UNIT VALUES (DFU)

<u>PLUMBING APPLIANCES, APPURTENANCES, OR FIXTURES</u>	<u>MINIMUM SIZE TRAP AND TRAP ARM⁶ (inches)</u>	<u>PRIVATE</u>	<u>PUBLIC</u>	<u>ASSEMBLY⁷</u>
<u>Bathtub or Combination Bath/Shower</u>	<u>1/2</u>	<u>2.0</u>	<u>2.0</u>	<u>=</u>
<u>Bidet</u>	<u>1/4</u>	<u>1.0</u>	<u>=</u>	<u>=</u>
<u>Bidet</u>	<u>1/2</u>	<u>2.0</u>	<u>=</u>	<u>=</u>
<u>Clothes Washer, domestic, standpipe⁵</u>	<u>2</u>	<u>3.0</u>	<u>3.0</u>	<u>3.0</u>
<u>Dental Unit, cuspidor</u>	<u>1/4</u>	<u>=</u>	<u>1.0</u>	<u>1.0</u>
<u>Dishwasher, domestic, with independent drain²</u>	<u>1/2</u>	<u>2.0</u>	<u>2.0</u>	<u>2.0</u>
<u>Drinking Fountain or Water Cooler</u>	<u>1/4</u>	<u>0.5</u>	<u>0.5</u>	<u>1.0</u>
<u>Food Waste Grinder, commercial</u>	<u>2</u>	<u>=</u>	<u>3.0</u>	<u>3.0</u>
<u>Floor Drain, emergency</u>	<u>2</u>	<u>=</u>	<u>0.0</u>	<u>0.0</u>
<u>Floor Drain (for additional sizes see Section 702.0)</u>	<u>2</u>	<u>2.0</u>	<u>2.0</u>	<u>2.0</u>
<u>Shower, single-head trap</u>	<u>2</u>	<u>2.0</u>	<u>2.0</u>	<u>2.0</u>
<u>Multi-head, each additional</u>	<u>2</u>	<u>1.0</u>	<u>1.0</u>	<u>1.0</u>
<u>Lavatory, single</u>	<u>1/4</u>	<u>1.0</u>	<u>1.0</u>	<u>1.0</u>
<u>Lavatory, in sets of two or three</u>	<u>1/2</u>	<u>2.0</u>	<u>2.0</u>	<u>2.0</u>

<u>Washfountain</u>	<u>1½</u>	=	<u>2.0</u>	<u>2.0</u>
<u>Washfountain</u>	<u>2</u>	=	<u>3.0</u>	<u>3.0</u>
<u>Mobile Home, trap</u>	<u>3</u>	<u>12.0</u>	=	=
<u>Receptor, indirect waste^{1,3}</u>	<u>1½</u>	<u>See footnote^{1,3}</u>		
<u>Receptor, indirect waste^{1,4}</u>	<u>2</u>	<u>See footnote^{1,4}</u>		
<u>Receptor, indirect waste¹</u>	<u>3</u>	<u>See footnote¹</u>		
<u>Sinks</u>	=	=	=	=
<u>Bar</u>	<u>1½</u>	<u>1.0</u>	=	=
<u>Bar²</u>	<u>1½</u>	=	<u>2.0</u>	<u>2.0</u>
<u>Clinical</u>	<u>3</u>	=	<u>6.0</u>	<u>6.0</u>
<u>Commercial with food waste²</u>	<u>1½</u>	=	<u>3.0</u>	<u>3.0</u>
<u>Commercial Pot or Scullery</u>	<u>2</u>		<u>4.0</u>	<u>4.0</u>
<u>Special Purpose²</u>	<u>1½</u>	<u>2.0</u>	<u>3.0</u>	<u>3.0</u>
<u>Special Purpose</u>	<u>2</u>	<u>3.0</u>	<u>4.0</u>	<u>4.0</u>
<u>Special Purpose</u>	<u>3</u>	=	<u>6.0</u>	<u>6.0</u>
<u>Kitchen, domestic²</u>				
<u>(with or without food waste grinder, dishwasher, or both)</u>	<u>1½</u>	<u>2.0</u>	<u>2.0</u>	=
<u>Laundry² (with or without discharge from a clothes washer)</u>	<u>1½</u>	<u>2.0</u>	<u>2.0</u>	<u>2.0</u>
<u>Service or Mop Basin</u>	<u>2</u>	=	<u>3.0</u>	<u>3.0</u>
<u>Service or Mop Basin</u>	<u>3</u>	=	<u>3.0</u>	<u>3.0</u>
<u>Service, flushing rim</u>	<u>3</u>	=	<u>6.0</u>	<u>6.0</u>
<u>Wash, each set of faucets</u>	=	=	<u>2.0</u>	<u>2.0</u>
<u>Urinal, integral trap 1.0 GPF²</u>	<u>2</u>	<u>2.0</u>	<u>2.0</u>	<u>5.0</u>
<u>Urinal, integral trap greater than 1.0 GPF</u>	<u>2</u>	<u>2.0</u>	<u>2.0</u>	<u>6.0</u>
<u>Urinal, exposed trap²</u>	<u>1½</u>	<u>2.0</u>	<u>2.0</u>	<u>5.0</u>
<u>Water Closet, 1.6 GPF Gravity Tank</u>	<u>3</u>	<u>3.0</u>	<u>4.0</u>	<u>6.0</u>

<u>Water Closet, 1.6 GPF Flushometer Tank</u>	<u>3</u>	<u>3.0</u>	<u>4.0</u>	<u>6.0</u>
<u>Water Closet, 1.6 GPF Flushometer Valve</u>	<u>3</u>	<u>3.0</u>	<u>4.0</u>	<u>6.0</u>
<u>Water Closet, greater than 1.6 GPF Gravity Tank⁶</u>	<u>3</u>	<u>4.0</u>	<u>6.0</u>	<u>8.0</u>
<u>Water Closet, greater than 1.6 GPF Flushometer Valve</u>	<u>3</u>	<u>4.0</u>	<u>6.0</u>	<u>8.0</u>

For SI units: 1 inch = 25 mm

Notes:

¹ Indirect waste receptors shall be sized based on the total drainage capacity of the fixtures that drain therein to, in accordance with UPC Table 702.2(b).

² Provide a 2 inch (50 mm) minimum drain.

³ For refrigerators, coffee urns, water stations, and similar low demands.

⁴ For commercial sinks, dishwashers, and similar moderate or heavy demands.

⁵ Buildings having a clothes-washing area with clothes washers in a battery of three or more clothes washers shall be rated at 6 fixture units each for purposes of sizing common horizontal and vertical drainage piping.

⁶ Trap sizes shall not be increased to the point where the fixture discharge is capable of being inadequate to maintain their self-scouring properties.

⁷ Assembly [[See Minnesota Rules, chapter 1305, Minnesota Building Code](#)].

1 **4715.0704 FIXTURE CONNECTIONS (DRAINAGE)**

2 **Section 704.3.** UPC section 704.3 is amended to read as follows:

3 **704.3 Commercial Dishwashing Machines and Sinks.** Pot sinks, scullery sinks, [commercial kitchen sinks](#),
4 [beverage service sinks](#), dishwashing sinks, silverware sinks, commercial dishwashing machines, silverware-washing
5 machines, and other similar fixtures shall be connected directly to the drainage system. A floor drain [constructed](#)
6 [without backwater valves](#) shall be provided adjacent to the fixture, and the fixture shall be connected on the sewer
7 side of the floor drain trap, provided that no other drainage line is connected between the floor drain waste
8 connection and the fixture drain. The fixture and floor drain shall be trapped and vented in accordance with this
9 code.

10 **4715.0705 JOINTS AND CONNECTIONS**

11 **Section 705.10.2.** UPC subsection 705.10.2 is amended to read as follows:

12 **705.10.2 Expansion Joints.** Expansion joints shall be accessible and shall be permitted to be used where necessary
13 to provide for expansion and contraction of the pipes.
14

15 **4715.0707 CLEANOUTS**

16 **Section 707.4.** UPC Section 707.4 is amended by adding a new subsection:

17 [707.4.1 Back-to-Back.](#) A cleanout shall be provided on a common vertical fixture drain or common vent serving
18 [two fixture traps that connect to a vertical drain at the same level. The cleanout shall be the same nominal pipe size](#)

1 as the drain serving the fixtures. Where the vertical drain is accessible through the trap opening, the cleanout may be
2 eliminated.

3 **4715.0710 DRAINAGE OF FIXTURES LOCATED BELOW THE NEXT UPSTREAM MANHOLE OR**
4 **BELOW THE MAIN SEWER LEVEL**

5 Subp. 1. **Section 710.12.** UPC section 710.12 is amended to read as follows:

6 **710.12 Grinder Pump Ejector.** Grinder pumps shall be permitted to be used. The sump basin storage volume and
7 the pump capacity must be sized adequately to prevent overloading and must at minimum accommodate water
8 demand peak flow from all fixtures.

9 **710.12.1 Discharge Piping.** The discharge piping shall be sized in accordance with the manufacturer's
10 installation instructions and shall be not less than 1¹/₄ inches (32 mm) in diameter. A check valve and fullway-
11 type shutoff valve shall be located within the discharge line.

12
13 Subp. 2. **Section 710.13.** UPC section 710.13 is amended to read as follows:

14 **710.13 Macerating Toilet Systems.** Listed macerating toilet systems shall be permitted as an alternate to a sewage
15 pump system. A macerating toilet system may only be installed in one- or two-family dwellings when gravity flow
16 is not possible. Not more than one bathroom group, consisting of a toilet, a lavatory, and a shower or bathtub, may
17 discharge into a macerating toilet system. Components of macerating toilet systems shall be accessible.

18 **710.13.1 Sumps.** The sump shall be water- and gas-tight.

19 **710.13.2 Discharge Piping.** The discharge piping shall be sized in accordance with manufacturer's instructions
20 and shall be not less than 3/4 of an inch (20 mm) in diameter. The developed length of the discharge piping shall
21 not exceed the manufacturer's instructions. A check valve and fullway-type shutoff valve shall be located
22 within the discharge line or internally within the device.

23 **710.13.3 Venting.** The plumbing fixtures that discharge into the macerating device shall be vented in
24 accordance with this code. The sump shall be vented in accordance with the manufacturer's instructions and
25 such vent shall be permitted to connect to the fixture venting.

26 **4715.0712 TESTING**

27 Subp. 1. **Section 712.1.** UPC section 712.1 is amended to read as follows:

28 **712.1 Media.** The piping of the plumbing, drainage, and venting systems shall be tested with water or air. The
29 Authority Having Jurisdiction shall be permitted to require the removal of cleanouts, etc., to ascertain whether the
30 pressure has reached all parts of the system.

31
32 Subp. 2. **Section 712.** UPC section 712 is amended by adding subsections to read as follows:

33 **712.4 Negative Test.** In lieu of five pound air test, concrete manholes and sewer lines may be tested by negative
34 pressure in accordance with ASTM Standards C1214-92 and C1244-93.

35 **712.5 Finished Plumbing.** After the plumbing fixtures have been set and their traps filled with water, their
36 connections shall be tested and proven gas and water tight by plugging the stack openings on the roof and the
37 building drain where it leaves the building, and air introduced into the system equal to the pressure of a one inch
38 water column. Such pressure shall remain constant for 15 minutes or the duration of the inspection without the
39 introduction of additional air.

40 **712.6 Test Plugs or Caps.** Test plugs or caps for roof terminals must extend above or outside the end of the vent
41 pipe to provide a visible indication for removal after the test has been completed.

42
43 **4715.0713 SEWER REQUIRED**

44 Subp. 1. **Section 713.5.** UPC section 713.5 is deleted is deleted in its entirety.

45
46 Subp. 2. **Section 713.7.** UPC section 713.7 is amended to read as follows:

1 **713.7 Installation.** In cities, counties, or both where the installation of building sewers is under
 2 the jurisdiction of a **municipal utility easement**, the provisions of this code relating to building
 3 sewers do not apply.

4 **Exception:** Single-family dwellings and building or structures accessory thereto, existing and connected to an
 5 approved private sewage disposal system prior to the time of connecting the premises to the public sewer shall be
 6 permitted, where no hazard, nuisance, or insanitary condition is evidenced and written permission has been obtained
 7 from the Authority Having Jurisdiction, remain connected to such properly maintained private sewage disposal
 8 system where there is insufficient grade or fall to permit drainage to the sewer by gravity.

9 ~~Subp. 3 Section 713.8 Exceptions to public sewer. Existing single and two family dwellings and buildings or~~
 10 ~~structures accessory thereto, when connected to an approved private sewage disposal system prior to the time of~~
 11 ~~connecting the premises to the public sewer need not connect to public sewer when there is insufficient grade or~~
 12 ~~slope to permit drainage to the public sewer by gravity, and the following conditions are met:~~
 13 1. ~~No hazard, nuisance, or insanitary condition is evidenced from the private sewage disposal system;~~
 14 2. ~~The private sewage system is maintained properly; and~~
 15 3. ~~Written permission has been obtained from the Authority Having Jurisdiction.~~

16 **4715.0715 BUILDING SEWER MATERIALS**

17 **Section 715.3.** UPC section 715.3 is amended to read as follows:

18 **715.3 Existing Sewers.** Replacement of existing building sewer and building storm sewers using **cured-in-place**
 19 **pipe lining** trenchless methodology and materials shall be installed in accordance with ASTM F 1216. **Replacement**
 20 **using cured-in-place pipe liners must not be used on collapsed piping or when the existing piping is compromised to**
 21 **a point where the installation of the liners will not eliminate hazardous or insanitary conditions.**

22 **4715.0717 SIZE OF BUILDING SEWERS**

23 **Section 717.** UPC Table 717.1 is amended to read as follows:
 24

TABLE 717.1

MAXIMUM/MINIMUM FIXTURE UNIT LOADING

ON BUILDING SEWER PIPING

<u>SIZE OF PIPE</u> <u>(inches)</u>	<u>SLOPE,</u> <u>(inches per foot)</u>		
	<u>1/16</u>	<u>1/8</u>	<u>1/4</u>
<u>6 and smaller</u>	<u>(As specified in Table 703.2/ No minimum loading)</u>		
<u>8</u>	<u>1950/1500</u>	<u>2800/625</u>	<u>3900/275</u>
<u>10</u>	<u>3400/1600</u>	<u>4900/675</u>	<u>6800/300</u>
<u>12</u>	<u>5600/1700</u>	<u>8000/725</u>	<u>11 200/325</u>

For SI units: 1 inch = 25 mm, 1 inch per foot = 83.3 mm/m

1 **4715.0720 SEWER AND WATER PIPES**

2 **Section 720.1.** UPC Section 720.1 is amended to read as follows:

3 **720.1 General.** ~~Unless otherwise approved by the authority having jurisdiction, underground water service~~
4 ~~pipes and sewers or drainage piping shall not be less than 10 feet apart horizontally and shall be separated by~~
5 ~~undisturbed or compacted earth.~~ Building sewers or drainage piping of clay or materials that are not approved for
6 use within a building shall not be run or laid in the same trench as the water pipes unless ~~approved by the~~
7 ~~Authority Having Jurisdiction and~~ the following requirements are met:

8 (1) ~~The bottom of the water pipe, at points, shall be not less than 12 inches (305 mm) above the top of the sewer or~~
9 ~~drain line.~~

10 (2) ~~The water pipe shall be placed on a solid shelf excavated at one side of the common trench with a clear~~
11 ~~horizontal distance of not less than 12 inches (305 mm) from the sewer or drain line.~~

12 (3) ~~Water pipes crossing sewer or drainage piping constructed of clay or materials that are not approved for use~~
13 ~~within a building shall be laid not less than 12 inches (305 mm) above the sewer or drain pipe.~~

14 ~~For the purpose of this section, "within a building" shall mean within the fixed limits of the building foundation.~~

15 **4715.0721 LOCATION**

16 **Subp. 1. Section 721.1.** UPC section 721.1 is amended to read as follows:

17 **721.1 Building Sewer.** Except as provided in Section 721.2, no building sewer shall be located in a lot other than
18 ~~the lot that is the site of the building or structure served by such sewer.~~

19 **Subp. 2. Section 721.** ~~UPC Table 721.1 is deleted.~~

21 **4715.0722 ABANDONED SEWERS AND SEWAGE DISPOSAL FACILITIES**

22 **Sections 722.0 to 722.5.** UPC sections 722.0 to 722.5 are deleted in their entirety.

23 **4715.0723 BUILDING SEWER TEST**

24 **Section 723.1.** UPC section 723.1 is amended to read as follows:

25 **723.1 General.** Building sewers shall be tested by plugging the end of the building sewer at its points of connection
26 with the public sewer or private sewage disposal system and completely filling the building sewer with water from
27 the lowest to the highest point thereof, or by approved equivalent low-pressure air test. ~~Testing of building sewers~~
28 ~~shall be in accordance with Section 712.0.~~ The building sewer shall be gastight or watertight.

29 **4715.0724 RECREATIONAL VEHICLE SANITARY DISPOSAL STATION**

30 **Section 724.** Chapter 7 of the UPC is amended by adding the following sections:

31 **724.0 Recreational Vehicle Sanitary Disposal Station.**

32 **724.1 Construction.** Each recreational vehicle sanitary disposal (dump) station shall have a concrete slab with the
33 drainage system located as to be on the road (left) side of the recreational vehicle. The slab shall be not less than 3
34 feet by 3 feet (914 mm by 914 mm), not less than 3 ½ inches (89 mm) thick and properly reinforced. The slab
35 surface must be troweled to a smooth finish and sloped from each side inward to a drainage system inlet.

36
37 ~~The drainage system inlet shall consist of a 4 inch (102 mm), self-closing, foot-operated hatch of materials meeting~~
38 ~~these rules with the cover milled to fit tight. The hatch body shall be set in the concrete of the slab with the lip of the~~
39 ~~opening flush with its surface to facilitate the cleansing of the slab with water. The hatch shall be properly connected~~
40 ~~to a drainage system inlet, which shall discharge to a public or private sewer meeting the standards of this section.~~

41
42 **724.2 Flushing Device.** The recreational vehicle sanitary disposal station flushing device shall consist of a
43 supported riser terminating not less than 2 feet (610 mm) above the ground surface, with a ¾ of an inch (20 mm)
44 valved outlet adaptable for a flexible hose. The flexible hose shall be designed such that it cannot lie on the ground.

45
46 ~~The water supply to the flushing device shall be protected from backflow by means of a listed vacuum breaker or~~
47 ~~backflow prevention device located downstream from the last shutoff valve.~~

48
49 ~~Adjacent to the recreational vehicle sanitary disposal station shall be posted a sign of durable material not less than 2~~
50 ~~feet by 2 feet (610 mm by 610 mm) in size. Inscribed thereon in clearly legible letters shall be the following:~~

1
2 “DANGER – NOT TO BE USED FOR DRINKING OR DOMESTIC PURPOSES.”

3 **4715.0801 INDIRECT WASTES**

4 Subp. 1. **Section 801.2.2.** UPC section 801.2.2 is amended to read as follows:

5 **801.2.2 Walk-In Coolers.** Floor drains shall not be located inside walk-in coolers unless they are specifically
6 required by the licensing authority. Where required, floor drains shall be permitted to be connected to a separate
7 drainage line discharging into an outside receptor. The flood-level rim of the receptor shall be not less than 6 inches
8 (152 mm) lower than the lowest floor drain. Such floor drains shall be trapped and individually vented. Cleanouts
9 shall be provided at 90 degree (1.57 rad) turns and shall be accessibly located. Such waste shall discharge through an
10 air gap or air break into a trapped and vented receptor, except that a full-size air gap is required where the indirect
11 waste pipe is under vacuum.

12 Subp. 2. **Section 801.2.3.** UPC section 801.2.3 is amended by to read as follows:

13 **801.2.3 Food-Handling Fixtures.** Cooking ranges, steam kettles, potato peelers, ice cream dipper wells, and similar
14 equipment shall be indirectly connected to the drainage system by means of an air gap. Bins, cooling counters,
15 compartments, and other equipment having drainage connections and used for the storage of unpackaged ice used
16 for human ingestion, or used in direct contact with ready-to-eat food, shall be indirectly connected to the drainage
17 system by means of an air gap. Each indirect waste pipe from food-handling fixtures, storage or holding
18 compartments, or equipment shall be separately trapped and piped to the indirect waste receptor and shall not
19 combine with other indirect waste pipes. The piping from the equipment to the receptor shall be not less than the
20 drain on the unit, and in no case less than $\frac{3}{4}$ of an inch (20 mm).

21 Subp. 3. **Section 801.3** Bar and Fountain Sink Traps. UPC section 801.3 is deleted in its entirety.

22 **4715.0804 INDIRECT WASTE RECEPTORS.**

23 **Section 804.** UPC section 804 is amended by adding the following subsection:

24
25 **Section 804.2 Domestic or Culinary Type Fixtures prohibited as receptors.** No plumbing fixture which is used
26 for domestic or culinary purposes shall be used to receive the discharge of an indirect waste. Domestic use
27 dishwashers may discharge into a sink, or discharge to a sink tailpiece or food-waste grinder when installed in
28 accordance with section 807.4.

29 **4715.0813 SWIMMING POOLS**

30 **Section 813.1.** UPC section 813.1 is amended to read as follows:

31 **813.1 General.** Pipes carrying wastewater from swimming or wading pools, including pool drainage and backwash
32 from filters, including water from scum gutter drains and pool deck drains shall be installed as an indirect waste.
33 Where a pump is used to discharge waste pool water to the drainage system, the pump discharge shall be installed as
34 an indirect waste.

35 **4715.0814 CONDENSATE WASTES AND CONTROL**

36 Subp. 1. **Section 814.1.** UPC section 814.1 is amended to read as follows:

37
38 **814.1 Condensate Disposal.** Condensate from air washers, air-cooling coils, fuel-burning condensing appliances,
39 the overflow from evaporative coolers, and similar water-supplied equipment or similar air-conditioning equipment
40 shall be collected and discharged to an approved plumbing fixture or disposal area. Where discharged into the
41 drainage system, equipment shall drain by means of an indirect waste pipe. The waste pipe shall have a slope of not
42 less than $\frac{1}{8}$ inch per foot (10.4 mm/m) or 1 percent slope and shall be of approved corrosion-resistant.

43
44 Subp. 2. **Section 814.2.** UPC section 814.2 is deleted in its entirety.
45

1 Subp. 3. **Section 814.3.** UPC section 814.3 is amended to read as follows:
2 **814.3 Point of Discharge.** Air-conditioning condensate waste pipes shall connect indirectly to the drainage system
3 through an air gap or air break to properly trapped and vented receptors, the tailpiece of an approved plumbing
4 fixture, or to a place of disposal approved by the Minnesota Pollution Control Agency.

5 Condensate waste shall not drain over a public way or in areas causing nuisance.

6 **4715.0902 VENTS NOT REQUIRED**

7 **Section 902.2.** UPC section 902.2 is deleted in its entirety.

8 **4715.0903 MATERIALS**

9 **Section 903.1.** UPC section 903.1 is amended to read as follows:

10 **903.1 Applicable Standards.** Vent pipe and fittings shall comply with the applicable standards referenced in Table
11 701.1, except that:

12 (1) No galvanized steel or 304 stainless steel pipe shall be installed underground and shall be not less than 6 inches
13 (152 mm) aboveground.

14 (2) ABS and PVC DWV piping installations shall be in accordance with the applicable standards referenced in Table
15 1401.1.

16 **4715.0905 VENT PIPE GRADES AND CONNECTIONS**

17 **Section 905.3.** UPC section 905.3 is amended to read as follows:

18 **905.3 Vent Pipe Rise.** Unless as provided elsewhere in this code, each vent shall rise vertically to a point not less
19 than 6 inches (152 mm) above the flood-level rim of the fixture served before offsetting horizontally, and where two
20 or more vent pipes converge, each such vent pipe shall rise to a point not less than 6 inches (152 mm) in height
21 above the flood-level rim of the plumbing fixture it serves before being connected to any other vent.

22 **4715.0906 VENT TERMINATION**

23 **Subp. 1. Section 906.1.** UPC section 906.1 is amended to read as follows:

24 **906.1 Roof Termination.** Each vent pipe or stack shall extend through its flashing and shall terminate vertically not
25 less than 12 inches (304 mm) above the roof.

27 **Subp. 2. Section 906.3.** UPC section 906.3 is amended to read as follows:

28 **906.3 Use of Roof.** Vent pipes shall be extended separately or combined, of full required size, not less than 12
29 inches (304 mm) above the roof. Flagpoling of vents shall be prohibited except where the roof is used for purposes
30 other than weather protection. Vents within 10 feet (3048 mm) of a part of the roof that is used for such other
31 purposes shall extend not less than 7 feet (2134 mm) above such roof and shall be securely stayed.

33 **Subp. 3. Section 906.7.** UPC section 906.7 is amended to read as follows:

34 **906.7 Frost or Snow Closure.** Vent terminals shall be not less than 2 inches (50 mm) in diameter, but in no event
35 smaller than the required vent pipe. The change in diameter shall be made inside the building not less than 1 foot
36 (305 mm) below the roof in an insulated space and terminate not less than 12 inches (304 mm) above the roof.

37 **4715.1001 TRAPS REQUIRED**

38 **Section 1001.1.** UPC section 1001.1 is amended to read as follows:

39 **1001.1 Where Required.** Each plumbing fixture shall be separately trapped by an approved type of liquid seal trap.
40 This section shall not apply to fixtures with integral traps. Not more than one trap shall be permitted on a trap arm.
41 Food waste disposal units installed with a set of restaurant, commercial, or industrial sinks shall be connected to a
42 separate trap. Each domestic clothes washer and each laundry tub shall be connected to a separate and independent
43 trap, except that a laundry tub shall be permitted to also receive the waste from a clothes washer set adjacent thereto.
44 The vertical distance between a fixture outlet and the trap weir shall be as short as practicable, but in no case shall
45 the tailpiece from a fixture exceed 24 inches (610 mm) in length. One trap shall be permitted to serve a set of not
46 more than three single compartment sinks or laundry tubs of the same depth or three lavatories immediately adjacent

1 to each other and in the same room where the waste outlets are not more than 30 inches (762 mm) apart and the trap
2 is centrally located where three compartments are installed.

3 **4715.1007 TRAP SEAL PROTECTION**

4 **Section 1007.** UPC section 1007 is deleted in its entirety.

5 **4715.1008 BUILDING TRAPS**

6 **Section 1008.** UPC section 1008 is deleted in its entirety.

7 **4715.1009 INDUSTRIAL INTERCEPTORS (CLARIFIERS) AND SEPARATORS**

8 **Section 1009.2.** UPC Section 1009.2 is amended to read as follows:

9 **1009.2 Approval.** The size, type, and location of each interceptor (clarifier) or separator shall meet the requirements of this chapter, except for interceptors
10 or separators which are engineered and manufactured and which are documented by the manufacturer and the
11 project design engineer to be properly designed and sized for the specific project, and approved by the Authority
12 Having Jurisdiction. Except where otherwise specifically permitted, no wastes other than those requiring treatment
13 or separation shall be discharged into an interceptor (clarifier).
14

15 **4715.1010 SLAUGHTERHOUSES, PACKING ESTABLISHMENTS, ETC.**

16 **Subp. 1. Section 1010.1 .** UPC section 1010.1 is amended to read as follows:

17 **1010.1 Bottling establishments.** Bottling plants shall discharge their process wastes into an interceptor which will
18 provide for separation of broken glass or other solids before discharging liquid wastes into the drainage system.
19

20 **Subp. 2. Section 1010 Slaughterhouses, Packing Establishments, Etc.** UPC section 1010 is amended by adding
21 the following subsection:

22 **Section 1010.2 Slaughter houses.** Slaughtering and dressing room drains shall be equipped with separators or
23 interceptors approved by the administrative authority, which shall prevent the discharge into the drainage system of
24 feathers, entrails, or other material likely to clog the drainage system.

25 **4715.1014 GREASE INTERCEPTORS**

26 **Section 1014.3.7.** UPC section 1014.3.7 is amended to read as follows:

27 **1014.3.7 Abandoned Gravity Grease Interceptors.** Abandoned grease interceptors shall be pumped and filled as
28 required per the Authority Having Jurisdiction.

29 **4715.1017 OIL AND FLAMMABLE LIQUID INTERCEPTORS**

30 **Subp. 1. Section 1017.1.** UPC section 1017.1 is amended as follows:

31 **Section 1017.1 Interceptors Required.** Enclosed garages of over 1,000 square feet or housing more than four
32 motor vehicles, repair garages, gasoline stations with grease racks, work or wash racks, auto washes, and all
33 buildings where oily and/or flammable liquid wastes are produced as a result of manufacturing, storage,
34 maintenance, repair, or testing processes shall have an interceptor installed into which all oil, grease, and sand
35 bearing and/or flammable wastes shall be discharged before emptying into the building drainage system or other
36 point of disposal, when floor drains or trench drains are provided. The interceptor shall be located inside the
37 building.

38 Exception: Private garages serving one- and two-family dwellings.
39

40 **Subp. 2. Section 1017.2.** UPC section 1017.2 is amended as follows:

41 **Section 1017.2 Design of Interceptors.** Each interceptor shall be of watertight construction and of not less than 35
42 cubic feet holding capacity, be provided with a water seal of not less than three inches on the inlet and not less than
43 18 inches on the outlet. The minimum depth below the invert of the discharge drain shall be three feet. The
44 minimum size of the discharge drain shall be four inches. The interceptor may be constructed either: (i) of
45 monolithic poured reinforced concrete with a minimum floor and wall thickness of six inches with protected
46 treatment approved by the manufacturer for the intended use (ii) of iron or steel of a minimum thickness of 3/16
47 inch, protected with an approved corrosion resistant coating on both the inside and the outside, or (iii) of fiberglass

1 resins that comply with ASTM C-581 and meets IAPMO Material and Property Standard, PS 80-2003b, for
2 clarifiers.

3 The interceptor must be provided with a nonperforated iron or steel cover and ring of not less than 24 inches in
4 diameter, and the air space in the top of the tank must have a three-inch vent pipe, constructed of approved metallic
5 material, extending separately to a point at least 12 inches above the roof of the building. Drains and piping from
6 motor vehicle areas must be a minimum of three inches in size. Drains discharging to an interceptor must not be
7 trapped and must be constructed so as not to retain liquids. In motor vehicle wash facilities, a sand interceptor which
8 meets the requirements of section 1016.0, except that no water seal is permitted, may be installed to receive wastes
9 before discharging into a flammable waste interceptor.

10 No cleanout, mechanical joint, or backwater valve shall be installed inside the interceptor which could provide a
11 bypass of the trap seal. Only wastes that require separation shall discharge into the interceptor, except that a water
12 supplied and trapped sink may be connected to the vent of the interceptor. Whenever the outlet branch drain serving
13 an interceptor is more than 25 feet from a vented drain, such branch drain shall be provided with a two inch vent
14 pipe. A backwater valve shall be installed in the outlet branch drain whenever in the judgment of the administrative
15 authority backflow from the building drain could occur.

16 **4715.1101 GENERAL**

17 Subp. 1. **Section 1101.1.** UPC Section 1101.1 is amended to read as follows:

18 **Section 1101.1 Where Required.** Roofs, paved areas, yards, courts, courtyards, vent shafts, light wells, or similar
19 areas having rainwater, shall be drained into a separate storm sewer system, or into a combined sewer system where
20 a separate storm sewer system is not available, or to some other place of disposal satisfactory to the Authority
21 Having Jurisdiction. In the case of one- and two-family dwellings, storm water shall be permitted to be discharged
22 on flat areas, such lawns, so long as the storm water shall flow away from the building and away from adjoining
23 property, and shall not create a nuisance. **In no case shall water from roofs or any building roof drainage be allowed**
24 **to flow upon the public sidewalk.**

25
26 Subp. 2. **Section 1101.2.** UPC section 1101.2 is amended to read as follows:

27 **Section 1101.2 Storm Water Drainage to Sanitary Sewer Prohibited.** Storm water shall not be drained into
28 sewers intended for sanitary drainage **unless approved by the municipal sewer authority or stated elsewhere in this**
29 **code.**

30
31 Subp. 3. **Section 1101.3.** UPC section 1101.3 is amended to read as follows:

32 **Section 1101.3 Material Uses.** Rainwater piping placed within the interior of a building or run within a vent or shaft
33 shall be of cast-iron, galvanized steel, wrought iron, brass, copper, lead, Schedule 40 ABS DWV, Schedule 40 PVC
34 DWV, stainless steel 304 or 316L [stainless steel 304 pipe and fittings shall not be installed underground and shall
35 be kept not less than 6 inches (152 mm) aboveground], or other approved materials, and changes in direction shall
36 be in accordance with the requirements of Section 706.0. ABS and PVC DWV piping installations shall be installed
37 in accordance with IS 5, and IS 9.

38
39 Subp. 4. **Section 1101.11.** UPC section 1101.11 is amended to read as follows:

40 **1101.11 Roof Drainage.**

41 **1101.11.1 Primary Roof Drainage.** Roof areas of a building shall be drained by roof drains or gutters. The
42 location and sizing of drains and gutters shall be coordinated with the structural design and pitch of the roof.
43 **The roof drainage system shall be sized on a basis of a rate of rainfall of at minimum four inches per hour.**

44
45 **1101.11.2 Secondary Drainage.** Secondary (emergency) roof drainage shall be provided **in accordance with**
46 **Minnesota Rules, Chapter 1305.**

47
48 Subp. 5. UPC subsections 1101.11.2.1, 1101.11.2.2, 1101.11.2.2 (A), and 1101.11.2.2 (B) are deleted in their
49 entirety.

50 **4715.1106 SIZE OF LEADERS, CONDUCTORS, AND STORM DRAINS**

51 **Section 1106.3.** UPC section 1106.3 is amended to read as follows:

52 **Section 1106.3 Reduction in size prohibited.** Except for siphonic roof drainage system, storm drain piping shall
53 **not reduce in size in the direction of flow, including changes in direction from horizontal to vertical.**

1 **4715.1108 CONTROLLED-FLOW ROOF DRAINAGE**

2 **Section 1108.** UPC section 1108 is amended to read as follows:

3 **Section 1108.0 Controlled-Flow Roof Drainage.**

4 **1108.1 Application.** In lieu of sizing the storm drainage system in accordance with Section 1106.0, the roof
5 drainage shall be permitted to be sized on the basis of controlled flow and storage of the storm water on the roof,
6 provided the **design is based on a minimum of four inches per hour and the** following conditions are met:

- 7 (1) The water from a 25 year-frequency storm shall **not be stored on the roof exceeding 24 hours.**
- 8 (2) During the storm, the water depth on the roof shall not exceed the depths specified in Table 1108.1(2).
- 9 (3) Not less than two drains shall be installed in roof areas of 10 000 square feet (929 m²) or less, and not less than
10 one additional drain shall be installed for each 10 000 square feet (929 m²) of roof area exceeding 10 000 square
11 feet (929 m²).
- 12 (4) Each roof drain shall have a precalibrated, fixed (nonadjustable), and proportional weir (notched) in a standing
13 water collar inside the strainer. No mechanical devices or valves shall be allowed.
- 14 (5) Pipe sizing shall be based on the pre-calibrated rate of flow (gpm) (L/s) of the pre-calibrated weir for the
15 maximum allowable water depth, and Table 1101.7 and Table 1101.11.
- 16 (6) The height of stones or other granular material above the waterproofed surface shall not be considered in water
17 depth measurement, and the roof surface in the vicinity of the drain shall not be recessed to create a reservoir.
- 18 (7) Roof design, where controlled-flow roof drainage is used, shall be such that the design roof live load is not less
19 than **40 lb/ft².**
- 20 (8) Scuppers shall be provided in parapet walls. The distance of scupper bottoms above the roof level at the drains
21 shall not exceed the maximum distances specified in Table 1108.1(8).
- 22 (9) Scupper openings shall be not less than 4 inches (102 mm) high and have a width equal to the circumference of
23 the roof drain required for the area served, sized in accordance with Table 1101.11.
- 24 (10) Flashings shall extend above the top of the scuppers.
- 25 (11) At a wall or parapet, 45 degree (0.79 rad) cants shall be installed.
- 26 (12) Separate storm and sanitary drainage systems shall be provided within the building.
- 27 (13) Calculations for the roof drainage system shall be submitted along with the plans to the Authority Having
28 Jurisdiction for approval.

30 **4715.1109 Testing**

31 Subp. 1. **Section 1109.1.** UPC section 1109.1 is amended to read as follows:

32 **1109.1 Testing Required.** New building storm drainage systems and parts of existing systems that have
33 been altered, extended, or repaired shall be tested in accordance with **UPC section 712** to disclose leaks
34 and defects.

35 Subp. 2. **Section 1109.2.** UPC section 1109.2 and the subsections are amended to read as follows:

36 **1109.2 Exceptions.**

37 **1109.2.1 Testing is not required for:**

- 38 (1) **outside leaders;**
- 39 (2) **perforated or open drain tile; or**
- 40 (3) **portions of storm drainage system and sewers located more than ten feet from buildings,**
41 **more than ten feet from buried water lines, and more than 50 feet from water wells, and not**
42 **passing through soil or water identified as being contaminated.**

43 **1109.2.2 Building storm sewers may be tested in accordance with the Hydrostatic Test Method from the**
44 **City Engineers Association of Minnesota, except that an air test may be required for any section of the**
45 **building storm sewer that passes through contaminated soils or contaminated water. The Hydrostatic**
46 **Test Method, provisions F2 and F3, as specified in Standard Utilities Specifications for Watermain and**
47 **Service Line Installation and Sanitary Sewer and Storm Sewer Installation, written and published by the**
48 **City Engineers Association of Minnesota, 1999 edition, is incorporated by reference, is not subject to**
49 **frequent change, and is available in the office of the commissioner.**

1 **4715.1110 SIPHONIC ROOF DRAINAGE SYSTEM**

2 **Section 1110.** UPC chapter 11 is amended by adding a new section and subsections as follows:

3 **Section 1110.0 Siphonic Roof Drainage System.**

4 **Section 1110.1 General requirements.** In lieu of sizing the storm drainage system from conventional methods
5 as required in section 1106.0, the roof drainage may be designed as an engineered siphonic roof drainage
6 system when allowed by the administrative authority. The engineered siphonic roof drainage system must meet
7 the requirements of subparts 2 and 3.

8
9 **Section 1110.2 Design criteria.** The siphonic roof drainage system must be designed and certified by a
10 professional engineer licensed in the state of Minnesota.

11
12 **1110.2.1.** The system must be sized on the basis of a minimum rate of rainfall of four inches per hour.

13
14 **1110.2.2.** The drainage system must be designed according to ASPE Standard 45, Siphonic Roof Drainage,
15 and according to the manufacturer's recommendations and requirements. Manufacturer design software must be
16 in accordance with ASPE Standard 45.

17
18 **1110.2.3.** Roof drains must meet ASME A112.6.9, Siphonic Roof Drains.

19
20 **1110.2.4.** When designed for water accumulation, the roof must be designed for the maximum possible
21 water accumulation according to Minnesota Rules, chapter 1305 and section 1108.1 (7).

22
23 **1110.2.5.** Minimum pipe size must be 1-1/2 inches. All pipe sizes and cleanouts in the drainage system
24 must be designed and installed according to ASPE Standard 45.

25
26 **1110.2.6.** Horizontal pipe size must not reduce in the direction of flow.

27
28 **1110.2.7.** The plans and specifications for the drainage system shall indicate the siphonic roof drainage
29 system as an engineered method used for the design.

30
31 **1110.2.8.** The installed drainage system must be permanently and continuously marked as a siphonic roof
32 drainage system at approved intervals and clearly at points where piping passes through walls and floors. Roof
33 drains must be marked in accordance with ASME A112.6.9.

34
35 **1110.2.9.** The transition locations from the siphonic roof drainage system to a gravity system must be
36 determined by the design engineer at a location acceptable to the administrative authority. The design, sizing,
37 and venting of the transition location must be in accordance with ASPE Standard 45. The velocity at the
38 transition location to gravity shall be reduced to less than three feet per second. The gravity portion of the
39 building storm sewer system receiving the siphonic roof drainage system must be sized for the design rate but
40 no less than a rainfall rate of four inches per hour and in accordance with part section 1106.0.

41
42 **1110.2.10.** All plans, specifications, and calculations must be submitted to the administrative authority and
43 signed and sealed by the design engineer. The submitted calculations must include performance data for the
44 drainage system for the required rainfall rate, including the minimum and maximum calculated operating
45 pressures and velocities verifying that the design solution is within the operating parameters required by the
46 design standard. All performance data must be reported as the extreme maximum and minimum calculations
47 and shall not be presented with averaged data.

48
49 **Section 1110.3. Proof of suitability.** Upon completion of the project, proper tests, inspections, and certification
50 of the siphonic roof drainage system must be performed according to items 1110.3.1 and 1110.3.2:

51
52 **1110.3.1.** Testing must be performed according to ASPE Standard 45.
53

1 1110.3.2. Prior to the final plumbing inspection, the design engineer must provide written certification to
2 the administrative authority that the system has been visually inspected by the design engineer and the
3 installation has been properly implemented according to the certified design, plans, calculations, and
4 specifications. The submitted written certification must include any field modification from the initial design
5 involving dimensions, location, or routing of the siphonic drainage system that must be reapproved and
6 recertified by the design engineer and be accompanied by a final as-built design of the altered system and
7 supported by calculated data to show that the overall system remains in accordance with ASPE Standard 45.
8

9 **4715.1701 General.**

10 **Section 1701.1** UPC Section 1701.1 is amended to read as follows:

11 **1701.1 Applicability.** The provisions of **this chapter** shall apply to the installation, construction, alteration, and
12 repair of rainwater catchment systems for nonpotable applications listed in 1702.1.

13 1701.1.1 Irrigation. Rainwater catchment systems used for lawn irrigation are not covered under this Chapter.

14 1701.1.2 Combination Systems. Rainwater catchment systems used for lawn irrigation in combination with
15 any uses listed in 1702.1 shall meet the requirements of **this chapter**. The irrigation system shall be separated by
16 an air gap or proper backflow protection as required for potable water.

17 **4715.1702 Nonpotable Rainwater Catchment Systems.**

18
19 **Subp. 1. Section 1702.1** UPC section 1702.1 is amended to read as follows:

20 **1702.1 General.** The installation, construction, alteration, and repair of rainwater catchments systems intended to
21 supply uses such as water closets, urinals, trap primers for floor drains and floor sinks, industrial processes, water
22 features, vehicle washing facilities, cooling tower makeup and similar uses shall be approved by the commissioner.

23
24 **Subp. 2. Section 1702.2** UPC section 1702.2 is amended to read as follows:

25 **1702.2 Plumbing Plan Submission.** No permit for a rainwater catchment system shall be issued until complete
26 plumbing plans have been submitted and approved by the commissioner in accordance with Minnesota Rules, part
27 1300.0205, subpart 6.

28 **Subp. 3. Section 1702.4** UPC section 1702.4 is amended to read as follows:

29 **1702.4 Connections to Potable or Reclaimed (Recycled) Water Systems.** Rainwater catchment systems shall
30 have no direct connection to a potable water supply or alternate water source system. Potable or reclaimed
31 (recycled) water is permitted to be used as makeup water for a rainwater catchment system provided the potable or
32 reclaimed (recycled) water supply connection is protected by an air gap or reduced-pressure principle backflow
33 preventer in accordance with this code. An automatic means shall be installed to supply the rainwater catchment
34 system with makeup water when there is insufficient rainwater to meet the required demand or due to system failure.

35 **Subp. 4. Section 1702.5** UPC section 1702.5 is amended to read as follows

36 **1702.5 Initial Cross-Connection Test.** Where a portion of a rainwater catchment system is installed within a
37 building, a cross-connection test is required in accordance with Section 1702.11.2. Before the building is occupied

1 or the system is activated, the plumbing contractor shall perform the initial cross-connection test in the presence of
 2 the Authority Having Jurisdiction. The test shall be ruled successful before final approval is granted.

3 Subp. 5. Section 1702.7 UPC section 1702.7 is amended to read as follows:

4 **1702.7 Rainwater Catchment System Materials.** Rainwater catchment system materials shall comply with Section
 5 1702.7.1 through Section 1702.7.4.

6 **1702.7.1 Water Supply and Distribution Materials.** Rainwater catchment water supply and distribution
 7 materials shall comply with Chapter 6 and the requirements of this code for potable water supply and
 8 distribution systems, unless otherwise provided for in this section.

9 **1702.7.2 Rainwater Catchment System Drainage Materials.** Materials used in rainwater catchment drainage
 10 systems, including gutters, downspouts, conductors, and leaders shall be in accordance with Chapter 11 and the
 11 requirements of this code for storm drainage.

12 **1702.7.3 Storage Tanks.** Rainwater storage tanks shall comply with Section 1702.9.5.

13 **1702.7.4 Collections Surfaces.** The collection surface shall be constructed of a hard, impervious material.

14 Subp. 6. Section 1702.9 UPC section 1702.9.3 is amended as follows:

15 **1702.9.3 Collection Surfaces.** Rainwater shall be collected from roof surfaces. A rainwater catchment system shall
 16 not collect rainwater from:

- 17 (1) Vehicular parking surfaces
- 18 (2) Surface water runoff
- 19 (3) Bodies of standing water or
- 20 (4) similar

21 **1702.9.3.1 Prohibited Discharges.** Overflows and bleed-off pipes from roof-mounted equipment and
 22 appliances, condensate, and other waste disposal shall not discharge onto roof surfaces that are intended to
 23 collect rainwater for harvesting.

24 Subp. 7. Section 1702.9 UPC section 1702.9.4 is amended as follows:

25 **1702.9.4 Minimum Water Quality.** The minimum water quality for harvested rainwater shall meet the
 26 applicable water quality requirements in Table 1702.9.4.

27 Subp. 8. Section 1702.9.4 UPC section 1702.9.4 is amended by adding the following table:

28 **Table 1702.9.4**

<u>Measure</u>	<u>Limit</u>
<u>Turbidity (NTU)</u>	<u><1</u>
<u>E. coli (MPN/100ml)</u>	<u>2.2</u>
<u>Odor</u>	<u>Non-offensive</u>

<u>Temperature (degrees Celsius)</u>	<u>MR</u>
<u>Color</u>	<u>MR</u>
<u>pH</u>	<u>MR</u>
<p><u>MR = measured and rerecorded only</u></p> <p><u>Treatment:</u></p> <p><u>Minimum 5 micron absolute filter</u></p> <p><u>Minimum .5-log inactivation of viruses</u></p>	

1

2 Subp. 9. Section 1702.9.5 UPC section 1702.9.5.1 is amended as follows:

3 **1702.9.5.1 Construction.** Rainwater storage shall be constructed of solid, durable materials not subject to excessive
 4 corrosion or decay and shall be watertight, and suitable for rainwater storage.

5 Subp. 10. Section 1702.9.5 UPC section 1702.9.5.6(A) is amended as follows:

6 **1702.9.5.6(A) Animals and Insects.** Rainwater tank openings shall be protected to prevent the entrance of insects,
 7 birds, or rodents into the tank and piping system. Screen installed on vent pipes, inlets, and overflow pipes shall be
 8 corrosion resistant and have an aperture of not greater than 1/16 of an inch (1.6 mm) and shall be close fitting.

9 Subp. 11. Section 1702.9.5 UPC section 1702.9.5.8 is amended as follows:

10 **1702.9.5.8 Storage Tank Venting.** A vent shall be installed on each tank. The vent shall extend from the top of the
 11 tank and terminate a minimum of 12 inches above grade, shall be a minimum of 1-1/2 inch in diameter and turned
 12 downward.

13 Subp. 12. Section 1702.9.6 UPC section 1702.9.6 is amended as follows:

14 **1702.9.6 Pumps.** Pumps serving rainwater catchment systems shall be listed. Pumps supplying water to water
 15 closets, urinals, and trap primers shall be capable of delivering not less than 15 pounds-force per square inch (psi)
 16 (103 kPa) residual pressure at the highest and most remote outlet served. Where the water pressure in the rainwater
 17 supply system within the building exceeds 80 psi (552 kPa), a listed pressure reducing valve reducing the pressure to
 18 80 psi (552 kPa) or less to water outlets in the building shall be installed in accordance with this code.

19 Subp. 13. Section 1702.9.7 UPC section 1702.9.7 is amended as follows:

20 **1702.9.7 Roof Drains.** Primary and secondary roof drains, conductors, leaders, and gutters shall be designed and
 21 installed in accordance with Chapter 11 of this code. Secondary roof drains shall be alarmed.

22 Subp. 14. Section 1702.9.8 UPC section 1702.9.8 is amended as follows:

23 **1702.9.8 Water Quality Devices and Equipment.** The rainwater harvesting system must include filtration and
 24 disinfection to maintain the minimum water quality requirements in Table 1702.9.4. At a minimum a 5 micron

1 absolute filter will be provided along with disinfection to provide 0.5-log inactivation of viruses. Devices and
2 equipment used to treat rainwater shall be suitable for rainwater harvesting applications, properly designed, sized,
3 and documented for the specific project by a Minnesota Registered Professional Engineer.

4 Subp. 15. Sections 1702.9.11 and 1702.9.12 sections 1702.9.11 and 1702.9.12 are deleted.

5 Subp. 16. Section 1702.10 UPC section 1702.10.1 is amended as follows:

6 **1702.10.1 Commercial, Industrial, and Institutional Restroom Signs.** A sign shall be installed in restrooms in
7 commercial, industrial, and institutional occupancies using nonpotable rainwater for water closets, urinals, or both.
8 Each sign shall contain 1/2 of an inch (12.7 mm) letters of a highly visible color on a contrasting background. The
9 location of the sign(s) shall be such that the sign(s) shall be visible to users. The number and location of the signs
10 shall be approved by the Authority Having Jurisdiction and shall contain one of the following texts as determined by
11 the application:

12 1702.10.1(A) TO CONSERVE WATER, THIS BUILDING USES RAINWATER TO FLUSH TOILETS
13 AND URINALS.

14 1702.10.1(B) TO CONSERVE WATER, THIS BUILDING USES RAINWATER TO FLUSH TOILETS.

15 1702.10.1(C) TO CONSERVE WATER, THIS BUILDING USES RAINWATER TO FLUSH URINALS.

16 1702.10.1(D) TO CONSERVE WATER, THIS BUILDING USES RAINWATER TO * *

17 * * Shall indicate the Rainwater usage.

18 Subp. 17. Section 1702.11 UPC section 1702.11.2 is amended as follows:

19 **1702.11.2 Cross-Connection Inspection and Testing.** An initial and subsequent annual inspection and test in
20 accordance with Section 1702.5 shall be performed on both the potable and rainwater catchment water systems.
21 The potable and rainwater catchment water systems shall be isolated from each other and independently
22 inspected and tested to ensure there is no cross-connection in accordance with Section 1702.11.2.1 through
23 Section 1702.11.2.4.

24 **1702.11.2.1 Visual System Inspection.** Prior to commencing the cross-connection testing, a dual system
25 inspection shall be conducted as follows:

26 (1) Pumps, equipment, equipment room signs, and exposed piping in an equipment room shall be checked.

27 **1702.11.2.2 Cross-Connection Test.** The procedure for determining cross-connection shall be followed by
28 the plumbing contractor in the presence of the Authority Having Jurisdiction to determine whether a cross-
29 connection has occurred as follows:

30 (1) The potable water system shall be activated and pressurized. The rainwater catchment water system
31 shall be shut down and completely drained.

32 (2) The potable water system shall remain pressurized for a minimum period of time specified by the
33 Authority Having Jurisdiction while the rainwater catchment water system is empty. The minimum
34 period the rainwater catchment water system is to remain depressurized shall be determined on a case-
35 by-case basis, taking into account the size and complexity of the potable and rainwater catchment
36 water distribution systems, but in no case shall that period be less than 1 hour.

1 (3) Fixtures, potable and rainwater, shall be tested and inspected for flow. Flow from a rainwater
2 catchment water system outlet shall indicate a cross-connection. No flow from a potable water outlet
3 shall indicate that it is connected to the rainwater water system.

4 (4) The drain on the rainwater catchment water system shall be checked for flow during the test and at the
5 end of the period.

6 (5) The potable water system shall then be completely drained.

7 (6) The rainwater catchment water system shall then be activated and pressurized.

8 (7) The rainwater catchment water system shall remain pressurized for a minimum period of time
9 specified by the Authority Having Jurisdiction while the potable water system is empty. The minimum
10 period the potable water system is to remain depressurized shall be determined on a case-by-case basis,
11 but in no case shall that period be less than 1 hour.

12 (8) Fixtures, potable and rainwater catchment, shall be tested and inspected for flow. Flow from a potable
13 water system outlet shall indicate a cross-connection. No flow from a rainwater catchment water outlet
14 shall indicate that it is connected to the potable water system.

15 (9) The drain on the potable water system shall be checked for flow during the test and at the end of the
16 period.

17 (10) Where there is no flow detected in the fixtures which would indicate a cross-connection, the potable
18 water system shall be repressurized.

19 **1702.11.2.3 Discovery of Cross-Connection.** In the event that a cross-connection is discovered, the
20 following procedure, in the presence of the Authority Having Jurisdiction, shall be activated immediately:

21 (1) Rainwater catchment water piping to the building shall be shut down at the meter, and the rainwater
22 water riser shall be drained.

23 (2) Potable water piping to the building shall be shut down at the meter.

24 (3) The cross-connection shall be uncovered and disconnected.

25 (4) The building shall be retested following procedures listed in Section 1702.11.2.1 and Section
26 1702.11.2.2.

27 (5) The potable water system shall be chlorinated with 50 ppm chlorine for 24 hours.

28 (6) The potable water system shall be flushed after 24 hours, and a standard bacteriological test shall be
29 performed. Where test results are acceptable, the potable water system shall be permitted to be
30 recharged.

31 **1702.11.2.4 Annual Inspection.** An annual inspection of the rainwater catchment water system, following
32 the procedures listed in Section 1702.11.2.1 shall be required. Cross-connection testing, following the
33 procedures listed in Section 1702.11.2.2 shall be required every 5 years.

34 Alternate testing requirements shall be permitted by the Authority Having Jurisdiction.

35 Subp. 18. Section 1702 UPC section 1702 is amended by adding the following section:

1 **1702.12 Maintenance and Inspection.** Rainwater catchment systems and components shall be inspected and
 2 maintained in accordance with Section 1702.12.1 through Section 1702.12.3.

3 **1702.12.1 Frequency.** Rainwater catchment systems and components shall be inspected and maintained in
 4 accordance with Table 1701.5 unless more frequent inspection and maintenance is required by the
 5 manufacturer.

6 **1702.12.2 Maintenance Log.** A maintenance log for rainwater catchment systems is required. The property
 7 owner or designated appointee shall ensure that a record of testing, inspection, and maintenance in accordance
 8 with Table 1702.12 is maintained in the log. The log will indicate the frequency of inspection and maintenance
 9 for each system.

10 **1702.12.3 Maintenance Responsibility.** The required operation, maintenance, monitoring, testing, and
 11 inspection of rainwater catchment systems shall be the responsibility of the property owner.

12 Subp. 19. **Section 1702.12** UPC section 1702.12 is amended by adding the the following table:

TABLE 1702.12

MINIMUM ALTERNATE WATER SOURCE TESTING, INSPECTION, AND MAINTENANCE
FREQUENCY

<u>DESCRIPTION</u>	<u>MINIMUM FREQUENCY</u>
<u>Inspect and clean filters and screens, and replace.</u>	<u>Every 3 months</u>
<u>Inspect and verify that required disinfection, filters and water quality treatment devices and systems are operational and maintaining minimum water quality requirements in Table 1702.9.4.</u>	<u>After initial installation and monthly thereafter. Exception: Every 12 months thereafter when electronically monitored.</u>
<u>Inspect and clear debris from rainwater gutters, downspouts, and roof washers.</u>	<u>At the beginning of seasonal usage and monthly during seasonal usage.</u>
<u>Inspect and clear debris from roof or other aboveground rainwater collection surfaces.</u>	<u>At the beginning of seasonal usage and monthly during seasonal usage.</u>
<u>Remove tree branches and vegetation overhanging roof or other aboveground rainwater collection surfaces.</u>	<u>As needed</u>
<u>Inspect pumps and verify operation.</u>	<u>After initial installation and every 12 months thereafter</u>
<u>Inspect valves and verify operation.</u>	<u>After initial installation and every 12 months thereafter</u>
<u>Inspect pressure tanks and verify operation.</u>	<u>After initial installation and every 12 months thereafter</u>
<u>Clear debris from and inspect storage tanks, locking devices, and verify operation.</u>	<u>After initial installation and every 12 months thereafter</u>

<u>Inspect caution labels and marking.</u>	<u>After initial installation and every 12 months thereafter</u>
<u>Cross-connection inspection and test*</u>	<u>After initial installation every 12 months thereafter in accordance with Section 1702.11.</u>

* The cross-connection test shall be performed in accordance with the requirements of this chapter by plumber licensed under Minnesota Statutes, section 326B.46 and certified to ASSE Standard **61205120.**

1 Subp. 20. **Section 1702** UPC section 1702 is amended by adding the following section:

2 **1702.13 Operation and Maintenance Manual.** An operation and maintenance manual for rainwater systems shall
 3 be supplied to the building owner by the system designer. The operating and maintenance manual shall include the
 4 following:

5 (1) Detailed diagram of the entire system and the location of system components.

6 (2) Instructions on operating and maintaining the system.

7 (3) Details on maintaining the required water quality in Table 1702.9.4.

8 (4) Details on deactivating the system for maintenance, repair, or other purposes.

9 (5) Applicable testing, inspection, and maintenance frequencies in accordance with Table 1702.12.

10 (6) A method of contacting the manufacturer(s).

11 Subp. 21. **Section 1702** UPC section 1702 is amended by adding the following section:

12 **1702.14 Separation Requirements.** All underground rainwater service piping shall be separated from the building
 13 sewer in accordance with Section 609.2. Treated non-potable water pipes shall be permitted to be run or laid in the
 14 same trench as potable water pipes with a 12 inch minimum vertical and horizontal separation when both pipe
 15 materials are approved for use within a building. Where horizontal piping materials do not meet this requirement the
 16 minimum separation shall be increased to 60 inches. The potable water piping shall be installed at an elevation
 17 above the treated-non-potable water piping.

18 Subp. 22. **Section 1702** UPC section 1702 is amended by adding the following section:

19 **1702.15 Abandonment.** All rainwater systems that are no longer in use or fails to be maintained in accordance with
 20 Section 1702.12 shall be abandoned. Abandonment shall comply with Section 1702.15.1 and Section 1702.15.2.

21 **1702.15.1 General.** Every abandoned system or part thereof covered under the scope of this chapter shall be
 22 disconnected from any remaining systems, drained, plugged, and capped per the requirements of this plumbing
 23 code.

24 **1702.15.2 Underground Tank.** Every underground water storage tank that has been abandoned or otherwise
 25 discontinued from use in a system covered under the scope of this chapter shall be completely drained and filled
 26 with earth, sand, gravel, concrete, or removed in a manner satisfactory to the Administrative Authority.